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CONTENTS AND SUBJECT INDEX

SPECIAL ARTICLES:

- Some Costs of Illness Problems. By John H. Graves, San Francisco.....145
- Some Economic Aspects of Modern Medicine. By Daniel Crosby, Oakland.....147
- Is Socialization Inimical to American Medicine? By Rexwald Brown, Santa Barbara.....152
- Medical Economics—Present Activities. By J. Rollin French, Los Angeles.....156
- State Sponsored Medical Aid at Cost. By Ralph A. Reynolds, San Francisco.....162
- The Public Health Center. By J. L. Pomeroy, Los Angeles.....163
- Medical Social Work and Public Health Activities. By Frank L. Kelly, Berkeley.....164
- Medical Licensure in California. By C. B. Pinkham, San Francisco.....167
- Discussion on papers of Doctors Graves, Crosby, Brown, French, Reynolds, Pomeroy, Kelly, and Pinkham. By Lyell Carey Kinney, San Diego; Rodney Yoell, San Francisco; John C. Rudock, Los Angeles.
- Circulatory Changes During Spinal Anesthesia. By M. H. SeEVERS and R. M. Waters, Madison, Wisconsin.....169
- Leukopenia—A Review: With Special Reference to Agranulocytic Angina. Part II. By O. H. Perry Pepper, Philadelphia, Pennsylvania.....173
- The Mental Hygiene Survey of California. Part I. By Frederick H. Allen, Philadelphia, and Glen Myers, Los Angeles.....177
- Paralysis—From Spurious Jamaica Ginger Extract. By Frank G. Crandall, Whittier.....180
- Postural Tensions for Normal and Abnormal Human Behavior—Their Significance. Part I. By E. J. Kempf, New York, N. Y.....182
- Organized Tropical Medicine in the Western United States. By Alfred C. Reed, San Francisco.....185
- Discussion by John Martin Askey, Los Angeles; Robert A. Peers, Colfax; Alanson Weeks, San Francisco.
- Ocular Muscle Operations. By Joseph L. McCool, San Francisco.....189
- Discussion by Roderic O'Connor, San Francisco; Hans Barkan, San Francisco.
- The Relation of Pathology to Legal Medicine. By Zera E. Bolin, San Francisco.....195
- Head Injuries—Their Treatment. By Edmund J. Morrissey, San Francisco.....198
- Discussion by E. B. Towne, San Francisco; Mark Albert Glaser, Los Angeles.
- Nephropotosis—Its Diagnosis and Treatment. By Jay J. Crane, Los Angeles.....201
- Discussion by William E. Stevens, San Francisco; H. A. Rosenkranz, Los Angeles.
- The Internal Ring in Oblique Inguinal Hernia. By Albert R. Dickson, Los Angeles.....204
- Discussion by W. S. Kiskadden, Los Angeles; O. O. Witherbee, Los Angeles.

- Bladder Tumors—Clinical Manifestations. By Louis Clive Jacobs and Abelson Epstein, San Francisco.....207
- Discussion by Charles P. Mathé, San Francisco; J. C. Negley, Los Angeles; Wilbur B. Parker, Los Angeles.
- Nongonorrheal Endocervicitis and Vaginitis. By Donald A. Dallas, San Francisco.....212
- Discussion by T. Floyd Bell, Oakland; Albert V. Pettit, San Francisco.
- Pylorotomy and Gastroenterostomy in One Operation. By Asa W. Collins, San Francisco.....216
- Discussion by Rodney A. Yoell, San Francisco; Carl L. Hoag, San Francisco; James F. Percy, Los Angeles.
- A Twelfth-Century Treatise on Surgery—The Lure of Medical History. By S. L. Millard Rosenberg, Los Angeles.....220

CLINICAL NOTES AND CASE REPORTS:

- Surgical Motion Pictures in Color. By Ernest W. Page, San Francisco.....222
- A New Instrument for Exposing Urethral Caruncle. By H. H. Parsons, San Bernardino.....223
- Iodin Douches in the Treatment of Trichomonas Vaginalis. By Hervey K. Graham, San Diego.....223

BEDSIDE MEDICINE:

- Chronic Bronchial Asthma.....224
- Discussion by Albert H. Rowe, Oakland; Samuel H. Hurwitz, San Francisco; George Piness and Hyman Miller, Los Angeles.

EDITORIALS:

- Medical Economics Articles in This Number of California and Western Medicine.....227
- California Medical Practice Act—Its New Amendment Relating to Board Appointments.....228

MEDICINE TODAY:

- The Use of Contact Glasses. By M. F. Weymann, Los Angeles.....232
- A Common Surgical Failure. By Harold E. Crowe.....232

STATE MEDICAL ASSOCIATIONS:

- California Medical Association.....233

MISCELLANY:

- News.....235
- Correspondence.....235
- Medical Legislation—S. B. 175 (Fellom).....236
- California State Fairs—Public Health Exhibits.....237
- California Licensure Statistics.....238
- California Medical Practice Act—Amendments.....239
- Medico-Legal—Lien Bill of New Jersey.....240
- Health Center Problems—Los Angeles.....241
- County Hospital Problems—San Diego.....244
- Twenty-Five Years Ago.....245
- California Public Health Officers—Roster.....246
- California Board of Medical Examiners.....248
- California Medical Association Directories.....248
- Adv. pages 2, 4, 6
- Book Reviews.....Adv. page 11
- Truth About Medicines.....Adv. page 26
- ADVERTISEMENTS—INDEX.....Adv. page 8

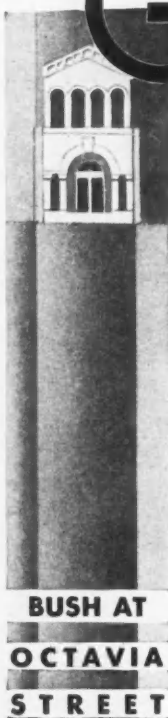
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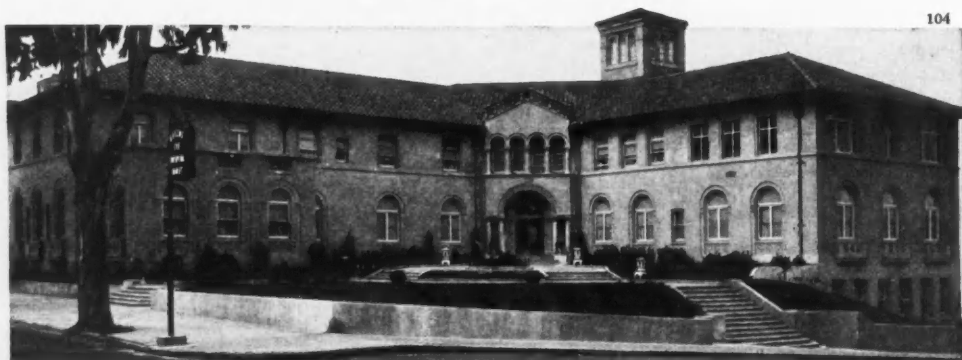
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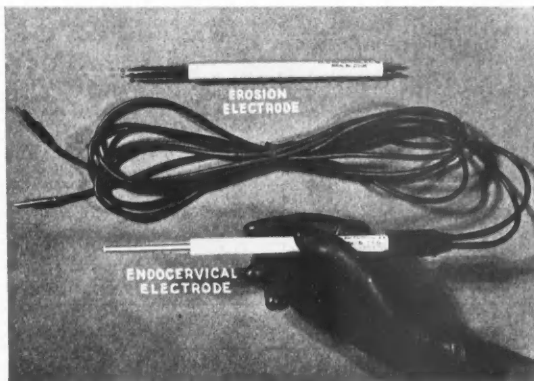
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* Each year the California Medical Association offers two prizes of One Hundred and Fifty Dollars each, with certificates of award, for the two best papers on clinical and research subjects. Full information concerning the conditions laid down in these competitions may be had by addressing the Association Secretary.

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SOME COSTS OF ILLNESS PROBLEMS*

By JOHN H. GRAVES, M. D.
San Francisco

THE studies which have been made by the Committee on Medical Economics, as one of the standing committees authorized in the by-laws of the California Medical Association, have been designed to ascertain:

First, the character and cost of medical services in California, and the ability of our citizens to pay for the same;

Second, what procedures could be instituted to increase the efficiency of professional medical services; what could be done to lower the costs; and how could the various factors that make up the costs of medical care be marked off for the purpose of special investigation.

THE STUDIES OF THE CALIFORNIA MEDICAL ASSOCIATION COMMITTEE ON MEDICAL ECONOMICS

In order to do these things, the committee has studied:

1. Various systems of socialized health insurance in foreign countries as regards the history, development, type of service and cost to the people.

2. Communistic control of medical activities as it exists in Soviet Russia.

3. Various plans in vogue in America that may be best defined as activities of health departments of national, state, county and municipal scope.

4. Medical service as rendered to employees of large corporations, when the systems were maintained by a system of wage deductions.

5. Various types and costs of medical service as rendered to the members of certain fraternal organizations such as lodges, labor unions, etc.

6. Health insurance policies and the promises contained therein, as sold by the private insurance companies.

7. Medical and surgical treatment and sickness prevention service as well as hospitalization, as

furnished by coöperative nonprofit organizations such as is given at the French and German (now the Franklin) Hospitals of San Francisco.

8. Investigation of certain so-called hospital organizations operated for profit, purporting to furnish medical and surgical service and hospitalization to subscribers.

9. Investigation of the basic costs of living, such as rent, heat, light, food, clothing, etc., as well as wage schedules, unemployment and various other factors that enter into the economic and social life of the citizens of the State of California.

10. Cost to the patient and type of service rendered by physicians and surgeons in private practice.

11. Cost of medical education and costs to a physician of maintaining a private practice.

THANKS TO THE NATIONAL COMMITTEE ON THE COSTS OF MEDICAL CARE

Your committee has endeavored to keep in touch with numerous agencies interested in this and similar problems and desires to express its sincere appreciation to the National Committee on the Costs of Medical Care for data furnished, and for the sympathetic and helpful attitude shown in the correspondence with that body, as well as that experienced through the personal visit of one of their representatives to the chairman of this committee.

SOME OUTSTANDING FEATURES OF THESE MEDICAL ECONOMIC PROBLEMS

The following brief outline gives but a faint idea of the magnitude of the effort which is necessary to secure basic and necessary facts from which conclusions can be drawn, and which will make safe foundations for the erection of a system of health insurance that will be practical for the public and profession of our State. This paper must content itself, if it can call attention to a few of the highlights on one or two of the innumerable features of this many-sided problem.

There seem to be two outstanding features of the costs of illness problem that have excited more interest than the others. The first being how to furnish full medical and surgical treatment to the man of moderate means, that is, to the so-called white collar citizen, without leaving him and his family in a state of economic dependency; the other being the development of a system for the prevention of sickness that will lower the rate of disability due to disease and which will prolong the life of the individual.

* Report of the California Medical Association Committee on Medical Economics. (See also page 447, June 1931, California and Western Medicine.)

* Read before the fourth general meeting of the California Medical Association at the sixtieth annual session, San Francisco, April 27-30, 1931.

Editor's Note.—This report by Doctor Graves and the papers which immediately follow by Doctors Crosby, Brown, French, Reynolds, Pomeroy, and Kelly, trench on the domain of medical economics. These papers were read at the 1931 California Medical Association annual session at San Francisco and are printed in this September issue as a symposium on the subject of medical economics.

The discussion of the above and several related papers will be found on page 167.

In its studies, your committee has endeavored to keep in mind the fundamental principles of the government under which we live, and has striven to eliminate as undesirable everything which would violate principles that are essential for the preservation of the reasonable rights of our citizens.

Careful investigations of the various systems of state control, which means political control of the problems of the sick, as well as direction of the activities of the medical profession by political powers, convince your committee that the experiences of foreign governments along these lines, while worthy of study, do not furnish a solution of our problems.

Any step in the direction of complete socialization of medicine, leading toward communism, we believe, would be unacceptable to the American people, as well as to the profession. In fact, the attitude of the public and the profession toward further extension of powers of our various governmental health departments, seems to be toward limitation rather than extension.

Your committee sees much to commend in the cooperative nonprofit organizations furnishing medical and surgical care and hospitalization, but the arrangements of such organizations for service with the profession demand extensive revision. The advantages which are supposed to come to physicians through the large amount of clinical material, plus the prestige that a staff appointment is supposed to convey, only too frequently are paid for by physicians through loss of reasonable fees that should be paid by persons amply able to afford such.

The committee unhesitatingly condemns the so-called hospital organizations which are operated for a profit, since such organizations under lay control exploit both the people and the medical profession.

The investigations by your committee of the services rendered to patients in private practice convince us that it is of a much higher and efficient type and rendered at a much lower cost than the public has been led to believe.

ILLNESS RATHER THAN MEDICAL CARE IS EXPENSIVE

In our first investigations it appeared that the costs of sickness could be about evenly divided between physicians' and surgeons' fees on the one hand, and all other expenses, as hospitalization, nurses, fees, etc., combined, on the other. However, as the studies progressed, the figures showed that the percentage paid to physicians and surgeons rapidly decreased. Thus the National Committee on the Costs of Medical Care has found in Philadelphia, during the boom year of 1928, that only 26 per cent of the cost of illness was paid to the medical profession.

The physicians in metropolitan centers enjoy larger incomes from their practices than do the rural practitioners; yet the 2247 physicians in Detroit who average 57½ hours per week in their practices received net annual incomes of

\$4448, while 701 dentists in the same city working forty-four hours per week, received net annual incomes of \$5393. So it is easy to see that the question of the high cost of sickness does not mean the high fees charged by physicians and that the title chosen by the national committee is a misnomer and should be changed to read: "The Committee on the High Cost of Sickness."

It is the intention of your California Medical Association Committee on Medical Economics to continue its studies of the various plans for the reduction of the cost of sickness that have been submitted to it by the members of the California Medical Association. The California Medical Association is to be congratulated on having so many members who take such a real interest in these important problems.

In passing we may state that the plan submitted by Dr. Walter B. Coffey to have the California Medical Association furnish to all people of moderate income a full service, including hospitalization, if it could be carried through, would be a bold step toward professional control of all the agencies of the healing art.

MANY CITIZENS ARE TOO EXTRAVAGANT

In our investigations, we again and again found examples of unwarranted extravagance on the part of many persons, in sickness as in other things. Many citizens frequently insist on expensive service, far beyond their means and wholly unnecessary in the treatment of disease. It is clearly apparent that the physician must make the safeguarding of the patient's financial interests during illness as much a part of his duty as the safeguarding of the patient's physical welfare.

Publicity on this matter of unnecessary costs of illness should be wide and extensive. Even though there is so much unemployment in the nursing profession as at the present time, the committee finds itself nevertheless compelled to urge wide and immediate extension of the group nursing system, whereby frequently one nurse may efficiently care for two patients, instead of two nurses caring for one patient. Such reduction of nursing expenses would go far in reducing the costs of illness.

RECHECK ON MODES OF LIVING DESIRABLE

We Americans, as a people, for a number of years, have been the spoiled darlings of prosperity. We have been on a long debauch of extravagance, and it is high time that we began to recover from the sea of dissipation, such homely virtues as thrift, economy and a deeper understanding of our personal obligations, which during our debauch voyage, we threw overboard.

We should not permit ourselves as a people to become so materially rich and prosperous as to be ashamed of our initial poverty or of the sturdy virtues necessarily acquired during that period, and which have had so much to do in bringing about whatever real greatness we may possess.

EACH COMMUNITY HAS ITS OWN SPECIAL PROBLEMS

We believe that medical service conditions vary so much in different communities that many of these problems are local in character. Therefore no one plan would be applicable to every community. Hence we urge, as various plans are evolved and completed, that they be carefully tried out in rather small communities, urban and rural, which will serve as experimental laboratories in which the social, economic and scientific experiments can be made.

CALIFORNIA MEDICAL ASSOCIATION MUST PROPERLY FINANCE THESE STUDIES

In conclusion: This committee realizing, as it does, the necessity of a study group composed of members of the medical profession in every community of the State of California, wishes to state that with our limited facilities, purely voluntary efforts will be wholly inadequate to prosecute these highly necessary works and studies to a successful conclusion. As none of the members of this committee are candidates for the job we urge that adequate funds be furnished by the California Medical Association to carry on these studies under efficient supervision and in proper fashion.

With sufficient funds and able leadership, the medical profession, with its greater and more intimate knowledge and experience of these problems, should then be able to occupy that commanding position which is so necessary for the protection of the public interest and the advancement of our professional standards.

SOME ECONOMIC ASPECTS OF MODERN MEDICINE*

By DANIEL CROSBY, M.D.
Oakland

IT would indeed be an act ungracious and unappreciative were the speaker to fail to acknowledge with expressions of gratitude the invitation of the Committee on Medical Economics of the California Medical Association to present a paper for consideration before this general session. Whatever effort he has made properly to prepare for the ordeal must be interpreted as the effort of a man somewhat seasoned in the practice of medicine, to evaluate some of the problems as he sees them and to give expression to his impressions and conclusions, based upon a somewhat extensive investigation and an almost endless perusal of documents.

FINDINGS OF THE NATIONAL COMMITTEE ON MEDICAL COSTS

The publications of the National Committee on Medical Costs have been most illuminating and have placed before us the following facts:

1. The cost of being sick is increasing, and is crippling, financially, to the moderate wage earner; and this condition is explained by the

increased cost of hospital erection and maintenance, and the increased scope and expense of clinical investigation.

2. Physicians' and surgeons' fees are only twenty-six to thirty per cent of the whole cost of illness.

3. Forty per cent of all doctors' bills are uncollectible.

4. There is inadequate medical service in all sparsely settled districts.

5. Certain philanthropic organizations are maintaining clinic and hospital service for those of moderate means, as evidenced by the Cornell Clinic and the Baker Memorial Hospital.

In passing, may I emphasize:

(A) The total medical and (or) surgical fee which may be charged for any service at the Baker Memorial Hospital is \$150.

(B) The total obstetrical charge, including hospital and nursing service and obstetrician's fee must not exceed \$100. The obstetrical service is maintained by the Massachusetts General Hospital.

(C) The Julius Rosenwald Fund has underwritten one-half of the Baker Memorial deficit to the amount of \$150,000, with the stipulation that not more than \$75,000 shall be paid within any one year.

6. Certain corporations are maintaining for their employees medical and social service activities, enterprises much to the benefit of the wage earner. We have some interesting examples of this in California.

These are some of the basic facts of costs of being sick and of measures for lessening the burden.

RECENT LAY LITERATURE ON MEDICAL COSTS

The reading public is being regaled with magazine and newspaper articles by the score, many times multiplied, showing how exorbitant are medical fees and how destructive is the cost of medical care, and these articles are emphasizing statements that:

1. The medical profession is doing nothing about it.

2. The medical profession is selfishly inactive in modification of the situation.

3. The public must take a hand to correct the "injustice."

Professional philanthropists, altruists and up-lifters are pointing at hospitals and accusing them of being in the paradoxical position of posing as Good Samaritans and packing a big stick. The Baker Memorial deficit program is an eloquent answer to the "big stick" premise.

In California one of our leading publicists is pointing to the State Insurance Program in Europe with commendation, telling us and his public that it is not possible that Europe is wrong and we are right. He would have the evidence of acceptance by many countries outbalance the adverse conclusions of Canada and the United States, perhaps not upon the theory that majorities are necessarily correct, but that since so many in Europe are suffering under this incubus, we

* Read before the fourth general meeting at the sixtieth annual session of the California Medical Association, San Francisco, April 27-30, 1931.

who are offshoots of Europe should accept socialized medicine as a visitation of the sins of the fathers unto the third and the fourth generation.

He would have us believe that the problems of the rank and file of Europe are our problems; that their economic, physical and psychological states parallel ours, and that our solutions should parallel. He does not tell his public in any specific terms of the complications, disaffections and general inadequacy of the European programs.

This man with a mentality so striking that almost nothing could destroy his individuality, accepts the destruction of individual independence for literally millions of people without compunction. He is perhaps permanently removed from any actual contact of his own person with this system in which he finds so much to approve.

A FOREST OF CONTRADICTIONS

One of our medical men in San Francisco, who has been writing and speaking much about Europe, is vigorously supporting his views with arguments which, I am sure, he considers conclusive. He will convince more lay audiences than medical ones, but the lay audiences relish information of the locations of bargains in cure and in Medical Utopias. They revel in facts. The relation of facts to idea and ideal they do not stop to consider.

Directors of publicly maintained laboratories and those doctors having a state aid complex tell us the state can do a Wassermann for twelve cents and advocate state laboratories. Some tell us that doctors are resorting too much to laboratories in lieu of clinical investigation and there is a modicum of truth here. Many speeches, eloquent and forceful, are written about irreducible minimum, relation of patient and physician, professional earning capacity, cost of education, constructive coöperative programs, needless utilization of specialists and changing modes in medicine. One leading surgeon tells us that hospitals pamper the patient; a philanthropist tells us that the medical charges are all wrong. A general surgeon of San Francisco complained to the writer of exorbitant fees charged in the more restricted specialties, and altogether we find ourselves lost in a forest of contradiction, unable to see the forest for the trees.

Scattered through the profession are men who think and say that socialized medicine is right and proper and should come, others who say it must be prevented by watchful waiting to prevent adverse legislation, others who say a socialization of hospitals and laboratories is necessary, others, a private insurance program. Somewhere within this tangle of theories lies an answer.

THE LAY PUBLIC IS ASKING QUESTIONS

But out of this welter of half truths given to the public, the quick and illogical conclusions of many speakers and writers, the position of negation to change on the part of the medical profession, people are asking us why we cannot accomplish for our people what many of the forward looking corporations are doing for their

employees, and why we cannot transplant some sort of health insurance program from Europe to America.

Our accusing querists do not take the trouble to go to the personnel offices of the forward looking corporations to see with what painstaking skill their wage earners are picked before they become employees. If this investigation were made, they would soon realize that many programs are possible for picked groups that cannot easily be applied to the rank and file. Furthermore the health insurance crusaders give them no real information, which shows the grievous inadequacy of the existing plans of socialized medicine abroad.

The non-medical philanthropists, uplifters, social service organizations and the medical theorists with socialistic tendencies are hurling the facts of cost at us and telling us that the public has a right to be well, that the medical profession is doing nothing about it and that the state must take a hand.

LAWS OF HEALTH AND HYGIENE ARE FLOUTED

They do not emphasize the fact that in all walks of life illness comes because the public, which we earnestly seek to serve and to protect, flouts all laws of health and hygiene. These crusaders would have us ram good health down the throats of all and sundry, irrespective of any coöperation we might have from them. The crusaders choose to disregard the fact that in any private insurance program the sickness report carries the question, "Is there anything in the habits of this patient that has had any influence in bringing on this illness?" "Is any action of this patient responsible for the prolongation of this disability?" Even in the insurance programs of the most reliable insurance companies a definite amount of coöperation is expected and required from the insured.

The multitude of pamphlets on the subject leaves us cold and we find ourselves in the position of Omar Khyham,

"Myself when young did eagerly frequent
Doctor and Saint and heard much argument
About it and about, but evermore
Came out by the same door as in I went."

WITH WHOM DOES THE SOLUTION OF THE PROBLEM REST?

The public is misinformed with reference to selfish inactivity. It is not misinformed about the "things as they be" attitude of many of our profession, but greatly are they misled if they think the solution—a constructive solution—rests with them. The solution rests with the medical profession aided by highly trained economists, working in conjunction with them to map out a constructive plan.

The public does not understand our system of medical ethics and they accuse us of being bound, hand and foot, by an antiquated system of rules of conduct which prevents our coöperation and which accounts for our laissez faire attitude. They tell us publicly and with much printer's ink

that we must change our tactics. The public sneers at medical ethics and will not see through our eyes the significance of the rules of conduct of medical practice which have developed through the years.

As a matter of fact, we all know that many of the medical profession are thinking hard about the whole matter, but they are coming always to the same impasse. The facts are admitted: medical fees could be reduced if the unpaid forty per cent could be collected; hospital and laboratory costs are virtually at an irreducible minimum. However, if we do not utilize for our patient every modality available for the diagnosis and treatment of his complaint, we are subject to suit for malpractice, and if we do use them we overtax the ability of the patient to meet his obligations. It is the old story "damned if you do, and damned if you don't."

WHAT IS THE ATTITUDE OF MEMBERS OF THE MEDICAL PROFESSION?

Let us see what the medical profession is really doing. We are all aware that a comparatively few men of the type of the chairman of this section are making serious and earnest investigation of the matter and are seeking to convince the public of their sincerity and of the accuracy of their information. However, when our chairman presented his illuminating and dramatic report before the House of Delegates last year it was received and filed almost without comment. When a member of the Medical Economics Committee of a large county society sought with much effort and with considerable expense to obtain a cross section of the earnings of medical men of his society a great majority of the members sent in carefully executed replies; a few with a pitiful sense of humor sent in replies so ridiculous that the entire effort became useless; a suspicious member or two removed the stamp on the post card to see whether there was any concealed mark of identification which would reveal his income.

PRESENT-DAY GROUPING OF THE MEDICAL PROFESSION

The medical profession seems to be divided into four unequal groups:

Group One.—A few men—mostly older practitioners—who have been through a baptism of blood in many years of practice and who are now chewing the withered fruit of wisdom, are seeing a real problem confronting the people and the medical profession. Such men, while carrying on the burden of daily responsibilities, are seeking a solution and are issuing warnings both to the lay and medical public. Most of their words seem to be delivered to people who, having ears, hear not.

Group Two.—The colleagues of the second group are convinced that the people and everyone who thinks any change necessary are all wrong. Medical service is better than ever; the personal relation of patient to physician must not be disturbed; specialists are not charging big fees; the

public is an extravagant public which buys what it cannot pay for; it is misled by religious cults on the one hand and bone-bouncers and their ilk on the other; it is fleeced by display advertisements in newspapers owned and operated by patriotic citizens in their respective communities which convince the ever gullible sick of the untold values of quacks and nostrums, Chinese herbalists, and electric contraptions, waters to drink, reducers effective while you eat, and revitalizers of all sorts. These colleagues say medical practice as it stands is just right and should go on unwaveringly through a storm of protests which will subside. (I should like to ask, in passing, whether there is a Better Business Bureau which makes it its business to investigate the truth of advertising that has ever functioned in terms of the tremendous quantity of display advertisements in the press or over the air, given out in the interests of quacks and their wares.)

Group Three.—There is another group, and it is a large one, whose members think and say "A change is coming, but it will not be in our time. God help the men who come after us." They are doing nothing and are helping in no way, but are taking the Louis XV attitude of "After us—the deluge." The members of this group are potent agents of destruction of the basic stability of medical practice.

Group Four.—The next group is made up of the young, inexperienced men and women just out of their hospital training who have taken the necessary high school course, admitting them to the university, have achieved their basic sciences, accomplished their cultural training and have struggled for grades. They have had science of medicine in the medical school, a little of the art of medicine in the hospitals, and are sent forth into the business of the practice of medicine without one moment of business training—without the slightest conception of the economic side of their relation to their patients and in most instances without any basic training in the actual conduct of an office. Tulane University Medical School is developing a program which is in the process of correcting most of this lack. It has the ardent support of that masterful surgeon and outstanding thinker, Dr. C. Jeff Miller, and is under the active direction of Dean Bass of the Medical School.

There are more than four thousand of these doctors being graduated in the United States each year to enter the practice of medicine for which they are well trained, and the business of conducting a medical practice of which they are entirely ignorant. It is not strange that many of these young men unwittingly invite for themselves and the profession which they honestly desire to adorn, much criticism and misunderstanding. If the Committee on Education of the American Medical Association would undertake to advise the modification of the training of these young men and women so that they could have a proper perspective of their socio-economic relation to their patients and give them some basic training to fit them for the business of the prac-

tice of medicine, perhaps the Association of Medical Colleges would cooperate in the installation of chairs of medical economics which would correct this lack. Certainly many deans recognize the need. It has been the writer's good fortune to be privileged to talk to the students of two great medical schools for two successive years upon the subject, and the avidity with which they received what little he was able to give them would convince the most doubtful, of the students' realization of this important omission in their education. The next five years will mark momentous changes in the business relations of the medical profession to the public and if, in that time, twenty thousand doctors could be trained with a proper perspective of business relations, there would be just twenty thousand additional medical men with increased constructive ability to understand, and assist in formulating new programs.

IS IT FAIR TO SHIFT THE BURDEN?

We have listened to our chairman with respect and confidence and affection. He has done yeoman's work for the medical profession of California in this matter. He has sacrificed time, strength and professional emoluments in his consecration to a program of medical betterment. We have an obligation to him which can never be repaid, but let us also acknowledge that we are willing for him to pursue his studies while we pursue the even tenor of our ways. He warns us of what impends.

Do you realize that the medical profession is really in a position of unarmed defense? It is even a crippled defense. It seeks to sit with senses alert to any adverse legislation which may come. A static defense keeps us merely where we are—the subject of attack from all quarters—and the longer this inactivity continues, the better those become armed who are seeking to convince themselves and the world that we are interested witnesses who cannot be trusted.

A POSITION OF MILITANT PROGRESSIVENESS IS NECESSARY

The time has arrived when the medical profession of the United States and specifically of California should take a position of militant progressivism in the matter.

We must recognize the fact that some change in the program for the small wage earner must come. He cannot always be bamboozled by the fictitious promises of irresponsible hospital association rackets; and in protest to such rackets some day some legislation which will really lessen the value of medical practice to the public will be enacted, accompanied by much enthusiastic misinformation.

AN OLD ENGLISH LAW AND ITS INFLUENCE IN CALIFORNIA

Let us glance at legislation a moment—notably at some legislative enactments based upon previous enactments in England. I refer specifically to the Inebriety Act which was passed in England in 1879. Don't accuse me of going back too

far for my examples because we suffer still from the guidance that that act gave our legislators. That act was full of discrepancies and structural defects that proved well-nigh fatal to the intent of the law. Those defects were all acknowledged and proven by the extensive hearings in England and were reported by the home office.

But legislators are in the business of making laws and they tend to be guided by like laws that have attracted their attention from somewhere off yonder. The same plan incorporated in bills by legislatures in the East was a failure in many states, but with all its defects, it was not so many years ago that it was enacted by our California legislators and stands as a comment upon the intelligence of the California legislative body that enacted it.

For years many of us, I am sure, have guided our patients toward a health insurance program. Those who have accepted our guidance found protection for the breadwinner, at least, from reputable insurance companies. Those who have sought something for nothing have paid their money to one of many of the cheap hospital association rackets and have come to grief in the process.

THE LAY HOSPITAL ASSOCIATION RACKETS

However, let us pause for a moment and consider the hospital association racket. We are in the habit of telling people a fact which we know to be true, namely, "three out of every five of our patients would recover whatever is done for them"—so these institutions function on the possible success with sixty per cent of the sick. The tragedies, in many instances avoidable, come in the forty per cent group which remains. These associations have functioned a good many years and probably every man in the room can name some patient who sacrificed life or well-being on one of these altars of false economy and insincerity.

The people, however, can hardly be blamed for believing their pretensions and for accepting them as merciful and not mercenary organizations when they are being told so much about the exorbitant fees of the members of our medical association and of the destructive charges of hospitals.

These something-for-nothing hospital organizations are rapidly increasing. It was the like increase of so-called friendly societies, hospital associations and like institutions that was one of the chief causes of the drastic and sudden introduction of the Panel System in England. Lloyd George, the canny little Welshman, prepared a sop for the English people of small means and rammed it down the throats of the divided and static medical profession of England. Those who point with pride at the achievement in England should go with us to some of their clinics where the clothed abdomen is palpitated by having a patient lean over a chair and where nearly thirty patients an hour pass through the hands of one clinician. If some of our crusading Panel enthusiasts could see this at close hand, they might devote their crusading tendencies to a modifica-

tion of that example before wishing it upon us. Let him note also that in England, where a considerable proportion of maternity cases come within the scope of the act, there is still an increasing death rate from puerperal sepsis.

If he retains his enthusiasm still for the Lloyd George program, let him ask any economist in the world about the Dole in England, or, let him ask any self respecting Englishman about it.

THE KRANKENKASSEN EXPERIENCE OF GERMANY

If he still looks to Europe for an inspiration, let him cast his eyes back to the time when Bismarck likewise, as a measure of political expediency, established health insurance in Germany. If his enthusiasm still prevails, let him count the roster of the army of political hirelings in the way of auditors, inspectors, referees, etc., constantly increasing and multiplying ad infinitum in the German health program today.

"In 1926, the supervising commission of 778 *krankenkassen* (health insurance centers), with 7,918,412 insured persons, thought it necessary to summon 1,259,016 unemployed patients for a control examination. Of that number, 198,142, or 16 per cent, did not appear, but reported that they had recovered; 219,913 appeared and announced that they could go to work again, and of the remainder 292,133, after the control examination, were declared to be recovered and able to resume their work. Thus, 810,188 patients, or 56.5 per cent, were found to be able to take up their work at once."

FRANCE IS VAGUE IN ITS ACCEPTANCE

The following comment upon the situation in France is significant: "The government officials in public praise the system in vague terms and in private admit its futility and danger."

Let the socialized medicine enthusiasts consult the morbidity and mortality rates and compare them with ours and he will, perhaps, realize the truth of what the medical profession is telling him and let him then consult the problem in Switzerland.

DENMARK HAS ABOLISHED THE HEALTH INSURANCE SYSTEM

If he then begins to waver, even a little, let him go to Denmark and let him note Denmark's answer to the social insurance propagandists. "Denmark declared that social insurance constitutes one of the most powerful means of depravation ever invented. Denmark abolished the system of health insurance and returned to the status quo ante as infinitely the preferable condition." The socialized medicine enthusiasts do not waste any eloquence upon this subject and, perhaps, this helps us to understand that the border line between some of their eloquence and super-heated air is very narrow.

PHYSICIANS SHOULD AVOID BEING PREJUDICED WITNESSES

I repeat, the witness whose interest is at stake is a poor witness for himself, however vociferous

he may be, and when we say that the medical situation is all right, better medical service is now being rendered than ever before, fees are not too large, the hospital charge has reached an irreducible minimum, we need not be surprised when the public receives our information with doubt.

Our attitude must be a dynamic one; not for us to say "everything is all right as it is"; not for us to say "it will come." It is imperative that we declare a broader program necessary. We are able to call into council those who can best advise us, and it is within our power to accomplish a solution.

We have educated the people in public health until they demand as their right the best health measures possible. In that we forced their coöperation but have finally accomplished their complete confidence. Let us make our campaign in this matter one which will cover with confusion the proponents of an English, a French, a German or a Soviet program.

HIGHLY TRAINED SPECIALISTS IN INSURANCE METHODS AND PROCEDURES ARE NEEDED

One of this group of medical practitioners would not be called into council on a serious matter of abstract business or of engineering. The consensus of opinion is that cost must be distributed and the logical conclusions look to an insurance program, and an insurance program calls for the services of highly trained specialists in insurance. In the medical economics committees of the larger association groups, specifically in the Economics Committee of the American Medical Association and in that of the California State Medical Association, there should be a highly trained, adequately paid insurance authority who would work with and be the business mentor and guide of the medical economics committee. He should bring his training to the assistance of the committees. They should temper his conclusions and guide him therein only on the medical side. If the medical profession does not give force to a program under trained guidance, some of our legislators will enact a half baked plan to which we will be compelled to kow tow and, as we all know, kow tow, literally translated, means "head bump." Whether we kow tow or not, if a socialized medicine bill becomes a part of our organic law, we and the public, as well, will be bumped in more places than our heads, and medical practice will be modified and will suffer thereby.

THE MEDICAL PROFESSION MUST HAVE A PROGRESSIVE PROGRAM

I repeat, the medical profession must be in the forefront of any progressive program. It must not remain firmly standing in static defense, but remaining steadfast to its principles, it must seek not state medicine but private insurance assistance of some sort for the man who wishes to meet his obligations in all things up to the limit of his means.

Casual, or even protracted planned interviews are not enough, a definite program must be evolved with the aid and counsel of the best insur-

ance authorities available, and a sufficient amount of money should be put aside for the adequate remuneration of these insurance consultants.

A plan of this sort could be evolved and could hold fast to the three principles:

1. Medical care must be personal to be effective.
2. Medical service must be organized to be either effective or economical.
3. The financial burden of sickness must be distributed if people are to escape charity or neglect.

PUBLIC RELATIONS ACTIVITIES ARE NEEDED

Our president, Dr. Kinney, who has so unselfishly sacrificed his time and energy to the honor of this organization has called to your attention that a public relations committee is necessary now and hereafter. He is aware that the great corporate business bodies must maintain such committees. Our California Medical Association should maintain a group made up of far-seeing lay and medical men who would constitute its Medical Economics Committee, who would seek to evolve a program and who, by all means available, would transmit to the public all requisite information in the premises.

Insurance is not *per se* a philanthropic game, but private health insurance, written by people able to fulfill the requirements of their agreement will constitute one of the greatest philanthropies of the age, and the people should be led to this by that profession which is at this moment offering them more protection than any other profession on earth.

Again let me emphasize: a fact is as inanimate as a stone until it is coupled with an idea and joined with an ideal. It is the conjuncture of the fact which we know, the idea which must be conceived and the ideal which is the living, breathing basis of the practice of medicine that is necessary to evolve a constructive solution. We must convince the public that we accept the fact of cost and that we are seeking a plan—that we are seeking the idea which will bring our ideal to fruition.

CONCLUSIONS

1. We must convince organized medicine of the facts of cost of illness and their significance.
2. We must convince the public that the people are getting only part of the truth in suggested modification programs.
3. We must seek from medical schools and from the Council of Medical Education of the American Medical Association a revision of the curricula which will broaden the training of medical students to meet changing conditions.
4. We must have a better liaison with the public.
5. We must call into council trained insurance authorities.
6. Holding fast to the ideals of scientific medicine, we must take a position of militant progressivism to meet the changing conditions of our modern age.

3115 Webster Street.

IS SOCIALIZATION INIMICAL TO AMERICAN MEDICINE?*

By REXWALD BROWN, M.D.
Santa Barbara

MEDICINE arose out of the primal sympathy of man with man; out of the desire to help those in sorrow, need and distress. This splendid conception of medicine was penned by the immortal William Osler.

Has medicine measured up in full to such spiritual status or has it in the course of centuries become integral with the international competitive system wherein each individual's welfare is of paramount importance regardless of or indifferent to the welfare of the neighbor? Is it not true that though the primal sympathy still has a high place in a physician's life, the expression thereof is largely a matter of individual relationship between one patient and one doctor?

MODERN ERA PRESENTS A COÖPERATIVE-COMPETITIVE COMPLEX

A new attitude of mind is emergent in civilization. It is recognition, born of scientific studies, that there is in nature not alone the competitive principle but also the coöperative. They exist side by side.

The competitive principle held sway in all life until an age when man had evolved to become a conscious individual. Then a softening purpose was breathed into the harshness of existence. Consciousness expressed itself in altering and modifying the competitive system, as expressed in the individual struggle for life. Unselfishness, philanthropy and altruism appeared as active factors in a changing world. The method to real happiness, the one goal to which all aspire, became evident.

Efforts to correct the stupid, disorderly and wasteful evils of the continuance of the competitive system are apparent to all. They are nowhere better manifested than in the industrial, commercial and business spheres where the competitive activities have always been at fever heat. Trusts, combinations, mergers, monopolies and trade unions demonstrate the replacement by collectivism of the fierce enslavement of individuals to the false idea that happiness and security are possible only through destructiveness of a fellow being.

COÖPERATIVE SPIRIT IS AT WORK

The coöperative spirit is at work, a leaven in society's advance. It is not contended that the injustices of the past centuries are obliterated. There is, though, a lifting of some of the weight from the harassed, the oppressed, the unfortunate and the unhappy—victims of the biologically unequal struggle.

The coöperative movements exist on different levels in different nations. They are variously

* Read before the fourth general meeting at the sixtieth annual session of the California Medical Association, San Francisco, April 27-30, 1931.

designated, condemned or approved according to the intellectual cultures of the citizens. In England one hears of Socialism, in Russia of Communism, in India of Gandhism and in America of Social Mindedness. The coöperative attitude is recognition that no individual exists apart from society. "I" implies the existence of "You." If not, neither word has any meaning.

To what extent has American medicine identified itself with the coöperative psychology or urge as exhibited in all parts of the world? Hardly at all. Physicians do help individuals in sorrow, need and distress, but they have found no way to spread their unselfish efforts over all humanity. This is a condition for which the profession has no reason to be proud.

The so-called organized American medical mind blindly refuses to be cognizant that medical socialization in various forms has for considerable time been under way. The lay mind more than the medical has been the leader in accepting such medical socialization concepts. Lay leadership is the result of the maladjustment of medicine to an enlightened civilization.

PREVENTIVE AND CURATIVE MEDICINES ARE NOT ANTAGONISTIC

The maladjustment is seen by the public in the disbalancement between preventive and curative medicine. The public is conversant with the inadequacy of personnel and financial support in official health agencies. It senses the lack of constructive interest in preventive medicine on the part of many practitioners of curative medicine. The public knows there is faulty distribution of physicians, hospitals, dispensaries, nurses and dentists in the United States. The public believes that many of its members, other than the wealthy and the indigent, do not have the benefits of modern medical knowledge. The inbetweens, the great mass of respectable and hard working citizens, complain that much of modern medical attention is out of the reach of their pocketbooks.

LAY ATTEMPTS TO REMEDY MEDICO-SOCIAL STRUCTURE

Nonprofessional society has attempted to correct these glaring faults in the medical social structure. Cities, counties and states are increasingly active in providing medical services to part or all of their citizens regardless of economic ratings. Schools and universities at minimum costs provide preventive and curative attention for their students. The state furnishes hospitalization for patients ill with mental aberrations, tuberculosis and bone and joint disabilities. Social service agencies, both public and private, have established preventive and curative clinics. A large amount of good can be properly accredited to health conservation leagues, community health associations, visiting nurse associations and health centers. They afford much trustworthy information especially on maternal, infant and venereal matters. The scientific service is not prohibitive in cost.

Significant in the growing movement of socialization of medicine is the operation of complete

medical and surgical departments by industrial plants and railroads. The insurance minded public has powerfully developed the social medicine idea. Many life insurance companies require their policy holders to submit to medical re-examinations. The companies are also active in demanding public health protection and in educating their members on health matters. Almost every state in the union has adopted compulsory workmen's compensation laws, the risk being carried by insurance. Medical service is interwoven in the laws. There are sporadic but numerous efforts to introduce sickness insurance in the United States particularly through fraternal orders and trade unions among wage earners.

Is not this marked activity among lay people convincing evidence that the public desires a higher degree of health than it now has? Are the movements not sufficiently indicative of the public's impatience with the inefficiency of the medical profession in achieving their desires?

Is the medical mind bereft of the comprehension that a large measure of social medicine is already in our midst? Have the medical eye and ear faculties atrophied to the extent that there is no perception of the almost complete failure of real medical organization in the United States?

The coöperative understanding is on the threshold of dominance in the life of man. It will not supersede the competitive principle. It will operate jointly with it. The levels from which the competitive principle will function are raised. On such levels will be found wider sharing in fundamental necessities for adequate and happy living.

The science of medicine has vast reservoirs of knowledge which should be available not only to physicians as sources of income but to all people for the maintenance of health. The knowledge should be humanized—made helpful to humanity in need. There can be no satisfying progress without health. Health of body and of mind underlies all human activity.

THE OBLIGATION OF ORGANIZED MEDICINE

The promotion of health to all is the responsibility and obligation of medicine. No other body of citizens can function adequately to this end. It is not true that the personnel of medicine is inferior in social mindedness to the lay mind. It cannot, however, be supported that there has been developed group consciousness toward organization to meet the responsibility and obligation. There has been no definite facing of the problem outlined in 1924 by Dr. Olin West, secretary of the American Medical Association, "The one great outstanding problem before the medical profession is that involved in the delivery of adequate scientific medical service to all the people, rich and poor, at a cost which can be reasonably met by them in their respective stations in life."

To the understanding of and attempts to solve this problem must major efforts of the medical profession be consecrated. The challenge from a thinking social structure is one worthy of the intellectual resources of physicians. The general

and specific backgrounds of education place physicians on a plane as high or higher than that of lay persons in the comprehension of the worth of concepts which guide human endeavor. The challenge will be accepted first, because medicine has not forgotten its origins in the expression of sympathy, and second, because under existing competitive attitudes of mind the existence of scientific medicine is at stake.

THE AMERICAN MEDICAL ASSOCIATION BUREAU OF MEDICAL ECONOMICS

The foundation of the organization plan was laid by the American Medical Association at its annual meeting last year on recommendations carried to the House of Delegates by representatives of the California Medical Association. A medical economics bureau was established. The bureau should be a body continuously in session if it is to formulate programs meriting approval of American physicians. The bureau must be adequately financed, otherwise physicians of statesmanlike calibre could not afford to be its personnel and function as an unprejudiced advisory committee.

At this juncture I suggest that the Committee of Medical Economics of the California Medical Association be composed of experienced physicians of judicial temperaments, interested in general problems of medicine rather than in personal problems of practice. I further suggest that the members of such committee be paid satisfactory compensation for all time service consisting of surveys and data on which recommendations to California physicians may be made. I also suggest that the money for this purpose be secured from the treasury of the Association. By furtherance of such procedure California would take the lead among the states of the nation in the investigation of how to improve the health and happiness of all the people.

MEDICAL PROFESSION LACKS ORGANIZATION

My purpose in this paper is to reiterate what I tried to convey in my paper, "The Business of Medicine," read before you last year. The emphasis was on lack of organization in the medical profession. Scientific medicine would be better understood and appreciated by the world if it displayed qualities of organization, direction and foresight. There is little safe leadership, that is, "management," in the affairs of medicine. Medical organization today is not far removed from chaos. I wonder if the lay public is entering into medical fields because those physicians who guide our national and state associations are interested largely in maintaining the status quo. Are our medical spokesmen broadminded and plastic to new conceptions or are they fettered by tradition?

The work of the economics committee of the California Medical Association would not exclude studies of social medicine, state medicine, health insurance or whatever the coöperative idea in medicine might be called. Why do many physicians oppose coöperative measures between phy-

sicians and all those who need their attention? It is due almost entirely to little understanding of what is meant by the proposals.

WHY SHOULD SOCIALIZATION OF MEDICINE BE FEARED?

The objections to some form of socialization of medicine are largely the products of fear. The fear is of crippling the work of scientific medicine. The arguments against socialization rarely touch on the value of the proposals to the public. The thousand and one phases of American life in which coöperative measures have been found essential to stabilization and security are ignored in the discussions. No thought is expended on the possibility of formulating a plan by which American medicine could add a new chapter to American institutions. The chapter would be constructively social, that is, in the interests of all.

Physicians of the United States have an indifferent appreciation of the increasing momentum of socialized medicine in most of the countries of the world. Whenever the topic reaches the conversational threshold, it is often tossed aside with the comment that conditions are different outside the United States, or with the remark that social medicine worked badly in England and is opposed by the British Medical Association. How little has filtered into the consciousness of American doctors that the great British Medical Association, after twenty years of study of the subject "The Health of the People," has in the last year made a proposal to the English public. The proposal is a comprehensive one intended to be satisfactory both to the recipients and givers of a medical service. The essence of the proposal is that the medical benefits of the present National Health Insurance Acts be extended to include dependents of all insured persons. The plan includes prevention as well as relief of disease. An open-minded doctor in this country should read English medical journals rather than American to get the facts about British medical opinions.

INITIATIVE IN MEDICINE WILL NOT BE ANNIHILATED

Among indictments of the socialization of medicine is the charge that initiative will be annihilated, that research medicine will cease and physicians will become mechanical. Is the indictment weak or strong?

There are three economic levels which roughly determine the kind of professional care patients receive. The wealthy class pay whatever the doctor charges. In this class people can exact anything that medicine has to offer. The indigent are given excellent attention and the cost is met indirectly by other taxpaying citizens. Those poor and in moderate circumstances, the bulk of the population, receive good, bad or indifferent attention from the medical profession dependent on their ability to meet the costs of limited or all services in which fixed charges, as x-ray or metabolic determinations, are economically basic in nature.

A MEDICAL INSURANCE PLAN PROPOSED

The medical insurance plan is one of fixing an economic level. At or below the level, an annual income of blank dollars, all people will receive the manifold blessings which have been brought into the world by medical discovery. The cost would be borne by recipients, by employers and by the state on a basis fair to all concerned. From a common denominator level the initiative urge would find no barriers to its progress.

The well-to-do should not be permitted to take advantage of a health insurance system. Those on an economic level above the established one would pay for their medical services as they do now. Many doctors would be satisfied to receive their compensation from the insurance fund, others partly from the fund, while others would confine their practices to the wealthy. The competitive system would commence operations from the established cooperative level. There would be no deterioration in medicine.

An opportunity to use initiative is constantly held before physicians and they turn away. Unless the demand of people for better health is recognized and met, there is much reason to believe that the medical profession will be incorporated in some type of social medicine controlled by lay personnel. This would very likely be a public catastrophe, tending to throw the race backward.

Is it difficult to understand that health insurance is but enlargement of the industrial accident compensation insurance laws which are in effect throughout the United States? Certainly older physicians in our state association remember the obstinate opposition when industrial accident compensation insurance was broached. Nowadays the medical profession has accepted its position in the accident insurance program as very satisfactory from both the professional and economic standpoints, the original points of difference having been studied, modified and then accepted.

SOCIAL MEDICINE A MIXTURE OF IDEALISM AND COMMERCIALISM

A friend recently told me that the field of medicine should be ever idealistic and there should be little contact with the field of commercialism. Though the two fields are far apart, in each one blossom many of the same flowers whose pollens unite. In commercial pursuits there is not a complete dearth of idealism, though the main objective is the making of money. In medicine there can be no service unless physicians receive compensation for their labors on the basis of just economic principles. The objective of physicians is not the making of money but the deliverance of health. Social medicine is the fruit of the uniting of the pollens of idealism and commercialism.

THE FAMILY DOCTOR—AN EXPRESSION OF IDEALISM

The highest expression of idealism in medicine has been the old family doctor. The economic

status of the old family doctor was not good. His earnings in general were low—not commensurate with his worth in the body politic. He was a slave to his clientele. They extolled his idealism and his disregard of commercialism, but extended him little money to meet the ordinary requirements of living. The education of his children was largely curtailed and often he was deprived of the means to enable him by association with his fellows, by travel and by perusal of recent books and journals, to keep abreast of the advances in his profession. Little time was allotted him for rest and recreation by which to refresh body and soul.

Social medicine will bring the family doctor idea to the fore again. The worth of the family doctor has been somewhat clouded by the modern specialist movement. The family doctor will be transformed into the general practitioner, the master consultant, the trusted counselor, guide and friend. He will be the backbone of the institution of social medicine. To a large extent he will be the director of specialists who will be his hands in carrying out the many difficult, intricate and special diagnostic and therapeutic procedures which no one physician is capable of achieving. The specialist will be inculcated with the general practitioner attitude of mind and will refer those patients outside his sphere to those capable of giving adequate service. Thought of and desire for fees will be eliminated. There will be no antagonisms and the general practitioner and the specialist will be broadened by associative contact.

SOCIAL MEDICINE EXISTS AND IS HERE

American medicine has partly swung into the cooperative spirit of the age. Witness to this statement is the increasing number of group practice clinics which are being established in many of the states. The most successful of these are the ones built about one or more general practitioners. Group practices will be best prepared to fit without marked adjustment into the institution of social medicine.

Social medicine becomes insistent on inclusion among the institutions of man. Its growth, its humanization, is a problem largely for medical direction and guidance. The medical profession is without question the most important factor in the whole program. Without the knowledge and applied service of properly educated physicians, social medicine will be a dismal debacle. The future of high minded medicine is in the channel of wisely organized cooperative endeavor. American physicians must build an essentially American plan of social medicine which will be free from proven defects in other countries.

As the cooperative movement gains momentum and reaches a more advanced level there may be found a solution to another problem about which earnest socially minded doctors are much concerned. The problem is the failure of large numbers of medical graduates to be conversant with the constantly mounting medical knowledge. Medicine's inadequacy, medicine's failure to register with large sections of the public lies in the

field of lazy indifference. Cultisms flourish in this field. Lack of real medical organization spells success for the opposition to basic science laws and encourages the continuance of the incompetent doctor in society.

THE COMPETENCY OF THE LICENSED PRACTITIONER

When physicians are satisfactorily compensated there will be found necessity to meet squarely the problem which has not been faced with courage. The problem, one on which the socialization of medicine must be continuously dependent, is the competency of the licensed practitioner. In this age, under the many diverging laws enacted in different states of the Union, the competency of physicians cannot be assured to the people. Every legal license to practice the healing art should be full evidence of worth and ability and security to the public in matters of sickness and health.

Social medicine should be a real contribution to social justice. In the present cycle of human thought it can be the culmination of physicians' efforts to express sympathy to those in sorrow, in need and in sickness. Full throated acceptance and announcement that the main purpose of scientific medicine is health for all, those now living and those as yet unborn, will change the course of human thought and action.

1421 State Street.

MEDICAL ECONOMICS—PRESENT ACTIVITIES*

WITH SUGGESTIONS ON PROPOSED CHANGES

By J. ROLLIN FRENCH, M. D.
Los Angeles

THE year 1931 has crystallized many smoldering economic problems in all walks of life, including that of the profession of medicine and surgery. In considering the problems of medical economics pertaining to the application of the art of practice today, we must visualize the situation and accept the new world as it now is and act according to the modern trend, instead of allowing tradition entirely to direct our activities. We must base our future policies on reason and act with vigor, dispatch, and common sense.

The basic thought in medical economics was admirably expressed by Dr. Olin West, secretary of the American Medical Association, a few years ago when he said, "The outstanding problem of the medical profession today is how may we convey adequate scientific service to all people, rich and poor, at a cost which can be met by them in their respective stations of life?"

WHAT CITIZEN GROUPS CAN PAY

It has been truthfully stated that only about 15 per cent of the population of the United States

are financially able to secure proper medical attention regardless of cost. Another 15 per cent are represented in the charity group, who are amply cared for, as far as scientific medical and surgical service is concerned, by the many well organized charitable hospitals, including city, county, and state institutions. The modest incomes, in many instances, of the remaining 70 per cent—the middle class—will not permit them to pay the costs necessarily attached to the present system of dispensing scientific medical care. As a result many are attracted by the glowing promises of unscientific cults and commercial quackery.

Little can be accomplished by attempting to legislate against this evil unless an educational campaign is instituted, molding the present ideas of the public.

The solution of the problem has attracted the attention of the public at large, principally because organized medicine has given but little or no consideration to the remedy for this timely subject.

The present activity in medical economics is not an attempt to revolutionize the science of medicine. It is an attempt, however, to force constructive consideration of evolution in the application of the art of practice, with the idea of overcoming "fogyism," which latter condition constitutes an unnecessary barrier to modern medical progress.

In discussing this problem our proposals for relief and amends are not put forward as specific plans for a magic cure. It is hoped, however, that the suggestions may in time receive sufficient support to be of service in an educational campaign which will benefit both the profession and the public. Moralizing, browbeating, rate-cutting, contracting, or any other one specific plan do not furnish a solution of the problems. The remedies do not come in pill form or in bottles. Before we make an attempt to form conclusions for relief or amends, modern ideas as well as traditions and history must be studied carefully from all angles, with a thought of justice to all.

THE BEGINNINGS OF MEDICAL ECONOMICS

The more or less intricate ramifications of this subject may be clarified by a brief review of the history which led up to the present trend. With the exception of the Oath of Hippocrates in about 500 B. C., there was nothing of importance in medical economics until the founding of the Royal College of Physicians in the fifteenth century. Prior to that date the healing art was considered largely the function of the clergy, surgery being the work of the layman and usually the side occupation of the barber.

Early hospital organizations were founded by religious groups who made the care of the sick a means of fulfilling religious vows. Thus was developed the tendency on the part of many of the people to expect medical care as a charitable service, a contention which has been more or less propagated ever since. The Royal College of Physicians at this time had no monopoly on the

* Read before the Industrial Medicine and Surgery Section of the California Medical Association at the sixtieth annual session at San Francisco, April 27-30, 1931.

healing art. The society of apothecaries was a strong rival until the seventeenth century. The seller of drugs prescribed and the physician mixed his own compounds. This competition developed the first evidence of cut rates for professional services. Immediately following the founding of the Royal College of Surgeons in 1810, some three hundred years after the founding of the Royal College of Physicians, the government began to give consideration to the subject of sanitation and public health. It was not, however, until it became apparent to even the dullest witted among the ruling class that the rich could not escape the contamination by disease propagated among the poor that more adequate provision was made for the extension of medical care to this class.

Just one hundred years ago, in 1831, the labor unions of England, even though they were not permitted to enter into collective bartering with employers on other matters, were allowed to enter into an agreement for wage deduction to provide medical care. This is the first intimation we have of contract medical practice. Those not employed or not having sufficient funds to pay their monthly medical dues were compelled to apply to the local poor authorities for medical services. Thus the beginning of the division of the middle social class into the upper and lower strata.

SOME RECENT EXPERIMENTS IN STATE MEDICINE

As time went on many new problems were presented, but it was not until 1895 that the British Medical Association, after investigation, reported that, while there were many aspects of contract medical practice to be condemned, they could offer no better substitute.

In 1907 the voice of the people commenced to make itself heard in unmistakable language, and the passage of the National Health Insurance Act in 1911 became inevitable. Thus in a measure the medical profession of Great Britain became subservient to lay supervision under political domination. Similar action will come in the United States unless the medical profession heeds the warning and develops better business and political technique through an active department of public relations for the promotion of a satisfactory system of service adaptable to the respective interests.

As early as 1900, European experiments in state medicine and compensation insurance began to receive public consideration in America. Soon after, action was manifest by the passing of the first compensation law. In 1913 California passed its compensation law. A few years later, what might be virtually termed a form of state medicine—a workmen's health insurance act—was proposed and placed on the California ballot. The measure was defeated, but cherished memories represented a smoldering fire. Similar memories throughout the nation have since been fanned by the demand of public sentiment for a change in the system of marketing medical service to the middle class.

AN ANALYSIS OF RECENT ACTIVITIES

In an effort to meet this demand there have developed various agencies of activity which have resolved themselves into four general classifications, namely:

1. Activities of organized medicine which, save for a few exceptions, have been ineffectual.
2. Activities of the general public, which may be subdivided into:

(a) Activities supported by philanthropists with good intent, but proposing methods of questionable application due to lack of knowledge of scientific principles.

(b) Activities of laymen with selfish interests and ulterior motives, with no respect for the application of medical ethics.

3. Activities of physicians and surgeons as individuals or groups. This class of effort may be subdivided similarly to that of the lay groups with the exception that there is evidence in numerous locations of constructive programs, scientific and businesslike in character, operated with good intent and results.

4. Activities of the Costs of Medical Care Committee at Washington. In 1927, allied interests, recognizing that medical economics was approaching a state of chaos, organized a committee, afterward called the Committee on the Costs of Medical Care. This committee received semiofficial recognition of the medical profession, interested scientific organizations and the government. It was made up of approximately fifty members, representing five distinct groups, namely: private practitioners, public health service, institutions with special interests, social sciences, and the public at large. Private interests and foundations have largely volunteered the necessary financial support, amounting to about one million dollars, for carrying on this survey in medical economics.

Realizing the magnitude of the problem, the committee estimated that five years would be necessary to reasonably complete the study. The object of its activity was to survey the economic aspects of the prevention and care of illness, including the adequacy, availability, and compensation of the persons and agencies concerned.

The committee has no idea of making suggestions which would in any way tend to commercialize medicine or lower scientific standards. The various surveys are purely for the purpose of accumulating facts and figures pertaining to medical service as it is now being rendered to the respective social classes. This statistical information, the committee hopes, will materially assist the medical profession in arriving at practical conclusions with respect to desirable changes in procedure.

For want of better understanding of this committee's work, many of the medical profession do not fully appreciate the value of this effort.

Illustrations of the other national activities of organized medicine are those of the medical as-

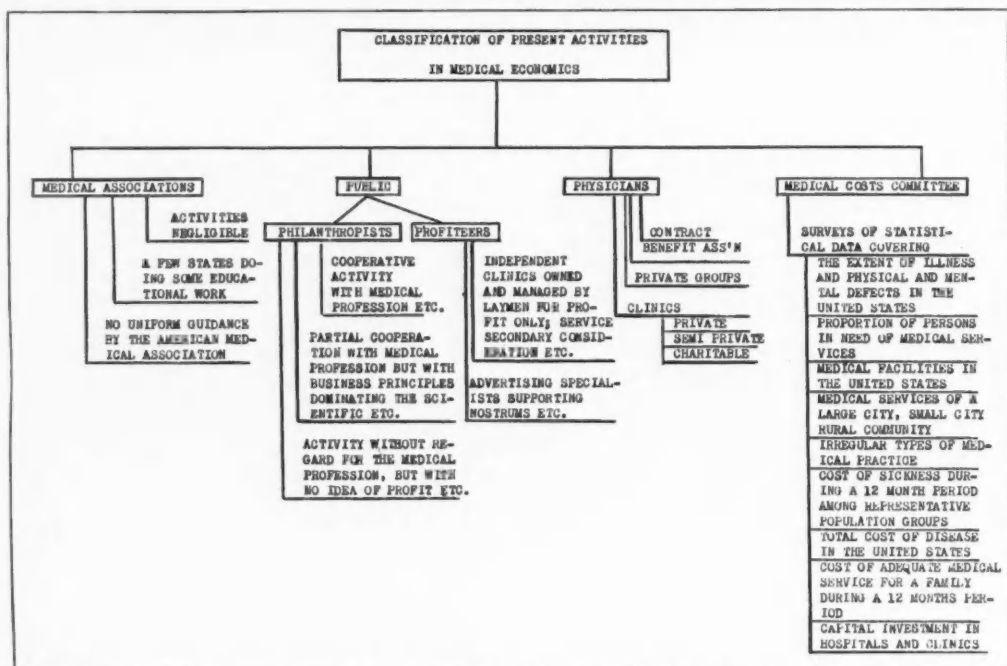


Chart 1.—Some major factors in medico-economic problems.

sociations of the states of New York and Minnesota. They have tried to educate the public by a constructive program of newspaper articles, radio talks, et cetera.

The activities of the general public may be illustrated in the parental rôle of some employers. The Johnson-Endicott survey of fifteen thousand employees furnishes statistical data showing that the costs of full medical care to the potential patient are \$21.80 per year. This expense was carried by the employer with no wage deduction from the employee.

Some philanthropists, at first contributing liberally to hospitals and scientific research under medical supervision, have since assumed the parental attitude and are attempting, with good intent, to inject their business judgment into the art of medical practice. Many lessons may be learned by the medical profession from such activities.

Activities of the layman with selfish interests are illustrated in some of the many organized-for-profit hospital associations which are springing up everywhere.

An illustration of the individual benevolent activity is the Cooperstown experiment. The Bassett Hospital Guild of Cooperstown, New York, started an experiment on January 1 of this year. They charge \$25 per person or \$100 per family per year as a fixed charge for full medical coverage. It is their idea to render complete scientific service as economically as possible, an individual guaranteeing the loss, if any, during the period of the experiment.

There are some so-called "nonprofit" organizations and hospitals rendering full medical ser-

vice. It is the opinion of many, however, that some of these institutions are using this intriguing idea merely as a camouflage to solicit public contributions for personal gain.

There are many irregular practitioners representing the various cults and laymen camouflaging as physiotherapists who are organizing clinics of physical service and soliciting patronage through newspaper advertising and radio talks. It is really surprising to learn that many seemingly intelligent people wear curative metallic rings, foster superstitions and fall for other quackery. Much of this tendency could be overcome by a constructive educational campaign under organized medical leadership.

Industry is beginning to recognize the value of better medical service to its employees. One employer said, "We are not rendering medical service to our employees because of paternalism. It has been proven beyond a reasonable doubt that full health service to employees is good business and productive of financial returns to industry, to say nothing of the advantages to the employee and his family."

Industry's greatest complaint is that doctors are not available who are properly trained to cope with industrial medical problems. This, of course, cannot be remedied noticeably until our medical schools recognize the importance of this virgin field for future usefulness of the physician and add a department for training students in medical insurance and commercial economics.

Insurance companies are not overlooking the possibilities of future forced health insurance. As yet, however, there has been no definite action on their part. The Metropolitan Life Insurance

Company offers some very interesting data which has been accumulated on the subject of medical costs. The work of this company in medical education of the public is to be commended.

The activities of physicians and surgeons as groups are well represented in the approximately one hundred and fifty private group clinics in the United States. The majority of these group clinics are located in the Middle West. With the exception of an outstanding few, the clinics are supported largely upon the merits of their services in competition with other physicians.

In passing I cannot help but mention that there are many detrimental influences to public health as well as to physicians' interests being manifest by the twenty-eight various isms, cults, paths, and religions, to say nothing of the dozens of commercial organizations which are virtually practicing some form of the healing art in California today. For want of properly applied organized opposition, supported and financed by the medical profession, many of these irregular practitioners have become inrooted with the sanction of state, which is a semiofficial recognition of the popular idea that organized medicine is a great American medical trust, having for its object the physicians' interests at the expense of the public.

THE INFLUENCE OF THE PUBLIC PRESS

The public press, lacking professional guidance, has been intrigued by the sentiment of lay and cultist organizations, including a few misguided members of the profession, and have taken advantage of this popular idea to make the medical profession and the hospitals defendants in a newspaper trial with the public as the plaintiff. Clever promoters and advertisers have spent millions in assisting the prosecution to stimulate the sympathy of the public, who also served as jurors.

Soon after the beginning of this trial of the so-called "Great American Medical Trust" on the charge of high cost of medical care, lack of coöperative organization prompted a split between the defendants. Instead of going to the bat, joining forces and coöperating, each defendant attempted to shift the liability to the other, thus practically stipulating that there was truth in the allegation, but leaving the issue as to the jury to decide whether it was individual liability on the part of the hospital or the medical profession, or whether it was a joint liability. The hospitals challenged the doctor, and vice versa, in defense of this public allegation. Neither presented constructive thoughts; hence the public has decided in favor of the plaintiff.

In California we now have documentary evidence as to how a straw vote of the jurors was expressed. The favorable state-wide referendum establishing a chiropractic board a few years ago was our first intimation of the antagonistic attitude of the public. The 1930 state election on the subject of eliminating taxation for nonprofit hospitals again expressed the public's antagonistic attitude toward the ideals of organized medicine. Over a million votes were cast, two to one for taxation. This must be interpreted either as rep-

resenting the public's antagonism toward organized medicine or as pure ignorance of the public on matters pertaining to medical economics. It matters not, but it does clearly illustrate the necessity for a constructive educational campaign under medical leadership.

Activities in medical economics have developed a national problem for the medical profession which cannot be ignored if future usefulness and dignity of the profession as an organization are to be fully preserved. Thus far, organized medicine has been on the defensive, with no coöperative defense. The majority has rendered its verdict in favor of the plaintiff public, hence directly jeopardizing the interests of the profession and indirectly mortgaging the public health of the future.

THE RÔLE OF MEDICAL ORGANIZATIONS

Is the medical society going to let tradition supersede modern business intelligence? Are physicians going to sleep on their rights and allow the statute of limitations to apply, thus denying the profession the right of appeal, or will they arise to the occasion and organize for an effectual offensive educational campaign? A large army of potential professional soldiers of doctors, nurses, hospitals, and allied professions only await training and leadership for constructive action.

Some may have the audacity to say that the medical associations have endeavored to carry out this thought. If they have, their efforts, with few exceptions, have been amateurish and the light of practical significance has been so buried under the bushel of tradition that the results thus far are negligible.

The dissemination to the public of information about things medical and of business art to the profession can no longer be left entirely to the discretion and efforts of an untrained, part-time, underpaid medical committee. Stop for a moment to consider the cash capital invested in or represented by the members of the State Medical Society. Figure the cost of medical education, office equipment, libraries, automobiles, and homes, to say nothing of the many other assets. Conservatively speaking, the cash invested in this state alone represents more than one hundred million dollars. Compare the limited protection and business forethought given by the medical profession to this tremendous investment with the business technique that is being applied to similar investment by a progressive business corporation. Reversing the comparison, the medical profession would say that the corporation was using peanut oil in an attempt to cure appendicitis. Medical science scoffs at the layman's use of nostrums and unscientific principles in the treatment of human ills. Yet the professional man has failed to recognize that the real business technique utilized in the average medical circle reflects practically the same picture in the business mirror.

PRELIMINARY STUDY IS NECESSARY

Before these problems in medical economics are earnestly approached by the medical profession,

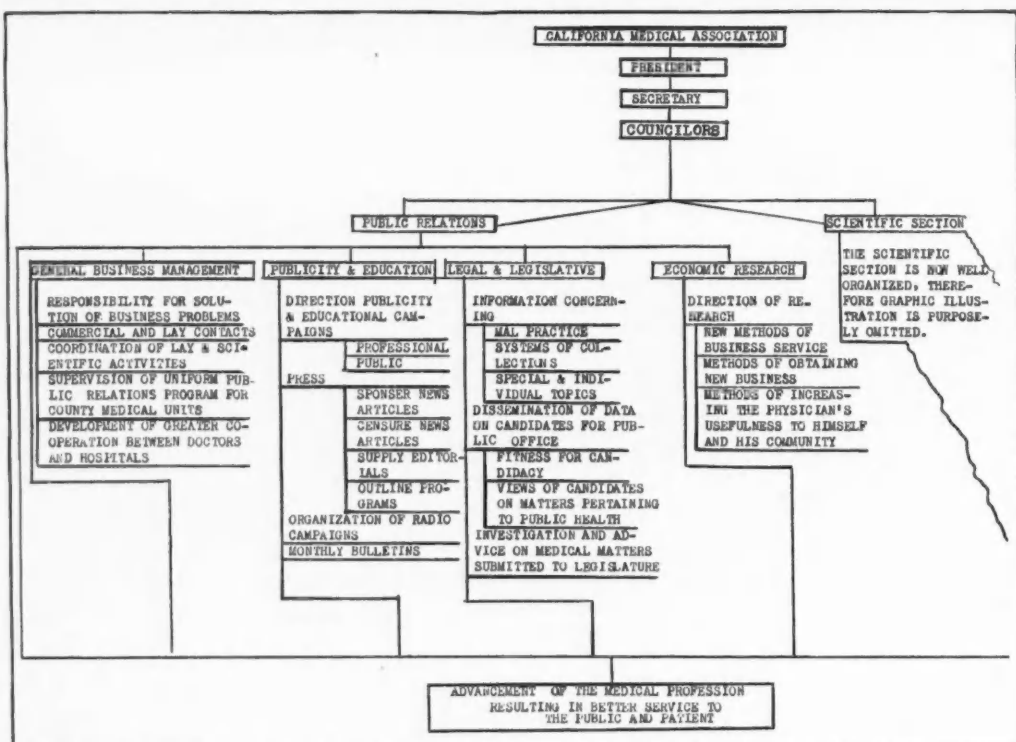


Chart 2.—An analysis of activities as applied to the California Medical Association.

preliminary scientific thought and business consideration must definitely outline the approach to a well-defined campaign for the procedure, incorporating only the basic business fundamentals, leaving the specific plans to be molded by early experiences and circumstances.

The success of any system of scientific service depends largely upon the ability to educate the doctors to the importance of supporting a well organized department of public relations in the medical associations. If this can be done, then medical leadership in matters pertaining to the health of the public is but a question of time. It is now time, so to speak, not only to continue our interest in the evolution of the science of medicine, but also to give whole-hearted consideration to the necessary readjustments in the art of practice.

NEED OF SELF-CHECKING

One of the first things to do may be nicely illustrated by the story of the colored boy, who recognized the value of modern business ideas and applied psychology. He went into a corner drug store and asked the proprietor if he could use the telephone. With an affirmative reply, he called Broadway 1234. Following the proper connection he said, "Mr. Jones, do you want a colored boy to work around your place and help you with the housework, gardens, automobiles, etc.?" Apparently the reply was negative, because the boy then said, "You say you don't? You say you have a colored boy working for you now? Well, Mr. Jones, is that boy you got now per-

fectly satisfactory? You say he is? All right, then, Mr. Jones. Good-by." As the colored boy hung up the receiver, the druggist, who had overheard the conversation, said, "Say, boy, I want a boy to work around the store." In reply the boy said, "Mr., I don't want no other job. I'm the boy that is working for Mr. Jones. I was just checking up on myself."

From the present trend of public sentiment, it is apparent that the medical profession has neglected to check up on itself, thus necessitating the public giving notice of dissatisfaction, which if not properly heeded by the profession, will result in more drastic action. The old saying, "We will either have to fish or cut bait" well expresses the present economic relationship between the medical profession and the public. In other words, if the medical associations do not develop leadership in health measures, they must be content to be followers and take the consequences. Aloof, dogmatic ideas can only broaden the gap of economic service in a democracy. An attitude of professional jealousy and revenge is the most expensive luxury known and accomplishes but little. On the other hand, the fight for medical leadership of public opinion is worth while. A democracy cannot be driven; it must be led.

SHALL PHYSICIANS OR LAYMEN BE THE GUIDES

Who are to be the leaders in the future program for the health of the public? The medical profession or the laymen? If it is to be the medi-

cal profession, we must change some of the aristocratic ideas sponsored by tradition and train our forces to exercise greater tolerance and develop better coöperation and technique in modern business procedure. The question immediately arises, "What should be done?" To answer this question in detail would require pages of manuscript. However, I trust a few suggestive thoughts will serve as an illustration in assisting the imagination to outline a procedure for practical amends.

ADAPTATION TO MODERN ENVIRONMENTS

Following an early check-up on ourselves, we should so mold medical traditions as to permit slight changes in the interpretation of our code of ethics, thus propagating more flexible relations with the commercial world. Remove the fear that has been impregnated in the doctor's mind that public leadership is unethical. Encourage public contacts. Tell the doctor what to do instead of what not to do. Make public relations a business instead of a side line. This will stimulate the desire of the physician to improve his standard of service instead of discouraging him in his efforts to practice.

Tell the public in a dignified manner what good service is and what it means, and how and where it may be obtained instead of allowing unscientific propaganda to mold the public mind into such a shape that it will not fit the hat of reason.

How can all these and other constructive programs be propagated? It would not be difficult if the medical profession would utilize scientific basic principles of business which have been successfully demonstrated in propagating similar ideas in business. Why not, then, organize a department of public relations in the California Medical Association under the leadership of a well qualified, aggressive business manager who understands the psychology of the art of practice, whose business it would be to train assistants and develop a department to actively promote and protect the interests of the Association and its members.

NEED OF PUBLIC RELATIONS DEPARTMENT IN ORGANIZED MEDICINE

Briefly describing its possibilities, let us visualize that the public relations department of the Medical Association is to be divided into four sections of activity—general business management, publicity and education, economic research, legal and legislative. The respective sections of the public relations department would assume the responsibility of properly caring for business problems; effecting commercial and lay contacts; coördinating lay and scientific activities; molding thought and leading auxiliary health movements; directing publicity and educational campaigns for the profession and the public; sponsoring and censoring general and special articles of news value; providing editorials; outlining programs for the press and county units; directing business service and research in new methods of

doing and obtaining business and the best methods of dealing with other economic problems of interest to the doctors of the Association; supplying the doctors and committees with information relative to the fitness of the respective candidates for public office with special reference as to how they would vote on matters of public health; investigating and advising in all matters submitted to the legislature; directing the legal aspect of business procedure of the Association and doctors; furnishing information concerning malpractice, systems of collections, as well as special information for the members upon request.

This department should issue a monthly bulletin to each member of the Association supplementing the official scientific publication and representing a medium for uniform guidance in business and public relations, thus intriguing the assistance of the small town or country practitioner, as well as the county medical units and the specialists of the city.

IN CONCLUSION

Yes, an efficient organization of this nature would cost money. However, if properly organized and managed, the indirect revenue to the individual physician would, within three years, be increased ten dollars for one contributed in support of the department, to say nothing of the intrinsic value to future generations of the medical profession and increased service to the public. One dollar per month from each member of the society would support a department which could put over a constructive program of education to the public and be of immeasurable value to the doctor in business guidance. We must not overlook the value of the diplomatic, ethical spreading of printer's ink, nor can we overlook the efficiency which has been developed in modern business procedure.

In estimating the value and usefulness of such a department of service, our imaginations must shift from the mental impressions molded by tradition to the horizon of the dawn of a new day. We must change our tactics from a losing battle in defense of professional egoism to an aggressive campaign for professional leadership in the health of the public or else be prepared to lose professional independence and become followers, subservient to lay and political domination. It can and must be done. There are many professional volunteers ready, awaiting only a well organized, modern department of our association for leadership.

We must treat problems of present-day medical economics symptomatically until a more specific plan, worthy of consideration, has been developed by a public relations department of the Medical Association.

The advice of the philosopher is now apropos: "Procrastination is the thief of opportunity. A thought to be worth while must complete itself in action."

423 Towne Avenue.

STATE SPONSORED MEDICAL AID AT COST*

By RALPH A. REYNOLDS, M. D.
San Francisco

BOTH the medical profession and the general public are becoming definitely aware of certain defects in health conditions in this country, prominent among which are the high cost of medical service and the lack of effective preventive work. A possible solution to such problems as these defects present is that of centralized government control of health service. More specifically, suggestions for compulsory health insurance under government control are being advanced by a number of reformers.

The idea of such centralized control is, I believe, sound and in many cases works out satisfactorily. It is on the grounds of expediency, rather than principle, that I should be unwilling to endorse its adoption in this country at the present time, and should suggest instead a more conservative step as a remedy for those defects already mentioned.

AMERICA NOT READY FOR COMPULSORY HEALTH INSURANCE

The introduction of a system of compulsory health insurance would not, I believe, be a welcome or a wholly beneficial one to the American public at the present time. It would necessitate the setting up of a vast and complex machinery of administration, which might be justified if the system were to embrace a complete program of social insurance, but hardly otherwise. It has been the experience of European countries that the adoption of health insurance leads generally to the subsequent adoption of a more extensive system of social insurance. The American public is not at the present time demanding *complete social insurance*. We are still too individualistically-minded. The public is not, as a matter of fact, demanding *health insurance*. Rather, it is demanding health service on terms which the average person can afford to pay. The public will be better satisfied and fully as well served, I believe, if under the present system preventive health service can be made easily available and *medical costs materially lowered*.

The average American family is able and willing to pay for medical services at moderate rates. If the man of average income could walk into the doctor's office for a consultation or a general health examination knowing that the expense involved would be only that of a customary charge for an office visit, he would not, I may venture to say, often hesitate on account of the expense. What keeps him away is the knowledge that the doctor will very likely (and rightly so) require a blood count, urinalysis and Wassermann, and possibly also an x-ray, basal metabolism and other laboratory work, as an essential part of examination and diagnosis.

* Printed as part of this symposium on medical economics because of its relationship to that subject.

THE NEWER METHODS OF DIAGNOSIS AND TREATMENT ARE EXPENSIVE

Our medical knowledge has increased at a phenomenal rate during the past twenty years, and the largest part of the increase in the cost of medical care arises from that new knowledge and the new methods based on it. This new knowledge makes necessary for sound medical practice the increased use of laboratories, hospitals, nursing, physical therapy, dentistry, new drugs and x-ray. Dr. Philip King Brown, basing his statement on records of the Southern Pacific Hospital during the last eleven years, estimates that the amount expended on laboratory and x-ray work has increased 650 per cent during that period. The only other item in medical costs which has kept pace to any degree is that of nursing service, which has increased 140 per cent. It seems logical, then, in seeking to reduce the cost of medical care that we turn our attention upon these items which have been largely responsible for its increase. The patient has been educated to know that such tests are necessary and that if he consults a doctor he must expect them. He knows, however, that they are all expensive. The total bill may run up no telling how high, but doubtless far above the initial fee for the consultation. Naturally the prospective patient postpones the consultation as long as possible.

THE STATE SHOULD CONTROL SUBSIDIARY HEALTH SERVICES

This situation would, I believe, be greatly relieved if all laboratory and x-ray work were performed by our boards of health and given to the public at cost. Similarly, certain routine procedures both in prevention and treatment of disease could be carried out in health centers under our boards of health. Such procedures might include the administration of toxin-antitoxin for prevention of diphtheria, vaccination against smallpox, the use of other vaccines and serums, desensitization for allergic conditions, and the administration of salvarsan and bismuth for syphilis. The transference of such procedures to the departments of public health would materially reduce the cost of medical service to the public and would make that cost more accurately predictable.

This transference would, of course, deprive the private practitioner of a certain amount of income. However, I believe that the change, in the long run, would be a beneficial one. It would shift the emphasis to the more important type of service which the physician alone can give. It would remove a source of dissatisfaction and suspicion on the part of the patient, who now often feels that he is being influenced against his will into a series of expenses. It would clarify and make more sound the basis for medical charges—such a basis being rightly the skill, training and experience of the physician and his ability to handle a case successfully.

AMERICAN CITIZENS WOULD WELCOME SUCH SUBSIDIARY HEALTH SERVICE

In reducing materially the cost of health service, such a program would tend to bring more people to their physicians for routine examination, thus accomplishing something toward the ideal of preventive medicine.

These measures, though limited in scope and certainly not revolutionary, would, I believe, be a sound first step toward relieving conditions. To a large degree their advantage lies in their being readily applicable to our present system and capable of administration under our established public health machinery.

The American people will, I believe, welcome such a change, whereas they can hardly be expected to support unanimously the more radical change to compulsory insurance, with its stigma (to the American mind) of increased taxation, curtailing of individuality and possibility of graft and bureaucracy. The public would not, I repeat, welcome this more radical change at the present time. Nevertheless, unless a more moderate reform is instituted—one which actually relieves the burden of medical costs—the public may eventually be driven to make a more radical change. This has been the case in several European countries where conditions were formerly similar to our own. Physicians there failed to see the signs of the times and did nothing toward correcting the faults which the public demanded to have corrected. Consequently, they have been forced eventually to submit to radical systems of socialization. This the American medical profession may avoid if, instead of combating all change, it applies itself to the successful institution of such reforms as will give the public real satisfaction without radically altering our system.

490 Post Street.

THE PUBLIC HEALTH CENTER*

By J. L. POMEROY, M. D.
Los Angeles

THERE is no doubt that the Public Health Center has a distinct function of considerable importance in relation to the economics of medical care. The significance of the Health Center movement lies in the definite recognition of the factors of time, proper working tools, and correlation of effort, particularly as applied to a unit of territory. The most profound factor is the recognition that the problem of public health is closely related to the practice of medicine and the problems of the social worker.

CLOSE RELATION OF PHYSICIAN, HEALTH OFFICER AND SOCIAL WORKER

Heretofore the health officer, the family physician, and the social worker not only rarely came in contact, but had no common viewpoint of the

community's needs. The doctor has been criticized as being entirely too individualistic, as failing to see the relation to community needs. The social worker is criticized as failing to understand the medical phase of her client and is frequently accused of making diagnoses and prescribing medical treatment. The health officer comes in for his share of criticism for invading the province of the private practitioner and endeavoring to build what is termed "State Medicine." The conception of the Health Center in Los Angeles County is based on definite provision for the persons in all three of these agencies to work together in the same building, keeping accurate records each of their part in the program, and to adjust the difficulties by frequent discussion as the problems arise. These Health Centers which are maintained by Los Angeles County are an application of modern business principles in public work and the adoption of group action in dealing with problems as closely inter-related as medical economics.

HEALTH CENTERS ELIMINATE DUPLICATION

In their actual operation the focusing of efforts of these agencies eliminates duplication of effort and overlapping of work. Throughout the United States health activities have grown up in many different bureaus, both official and non-official. Hospitals and other agencies are located regardless of the territory intended to be served. In many large cities we find literally hundreds of agencies (in Los Angeles 127) engaged in some form of health or medical work. On the contrary, in rural districts and small cities these functions are relatively undeveloped. Thus comes about a failure in proper distribution of services—a tremendous concentration in a few institutions, while the small towns and rural districts remain undeveloped. In Los Angeles County the public health territory is divided into twelve districts, each with approximately 100,000 population, and a health center building is erected in each district in which are mobilized all of the existing medical, social, and public health services of a public character. Naturally this service does not touch the sphere of work of the private hospital, nor the class of people who are able to pay a physician for private medical care. It does enable us to focus on the family groups, rapidly and with great efficiency those resources existing in the district. It is a common-sense application of business principles to house under one roof those agencies engaged in work on the same family. The physician who in private office practice writes a prescription for a patient receiving city, county or state aid, is ordinarily unable to consult directly with the social agency who is to provide the means to fill the prescription, nor does he obtain a real picture of the family home conditions. In the health center, however, such a physician is in close daily contact with the social workers, the health officer, the school and other nurses and can adjust his plan of treatment much more intelligently.

* From the Department of Health, County of Los Angeles. See, also, article in Miscellaneous column of this issue of California and Western Medicine on "Health Center Problems" (page 241).

HOW HEALTH CENTERS LESSEN COST OF ILLNESS

Furthermore, the modern program of public health, particularly in relation to tuberculosis, cancer, heart disease and mental hygiene means a much more elaborate equipment, personnel, and system of records than was formerly the case. In tuberculosis the modern discoveries of the use of the x-ray have changed our ideals regarding diagnostic equipment. Hence, the same situation that confronts the practitioner in a hospital exists in clinic and out-patient practice. In the health center by combining the financial resources of all departments better equipment can be secured and hence more accurate diagnosis becomes possible.

In many counties the obligation in the care of the poor is met entirely at the county hospital. Hospital treatment today costs between five and seven dollars a day. Treatment in health center clinics can be rendered from between fifty cents to \$1.50 per patient visit, depending upon the service rendered. Thus with proper equipment and proper organization the health center can relieve the county institution of hundreds of patients and save thousands of dollars in the course of a year.

BETTER CONTROL OF CONTAGIOUS DISEASES

The health officer, being in close touch with the physician, is able to get more prompt and accurate reports of the incidence of contagious disease and to render a greater service to the public thereby. The physician, through his daily contact with the community problems, is rendering a broader and bigger service than would be possible where he was struggling alone. In an hour, he can take care of twenty patients in the clinic of a health center where the diagnostic tests and other preparatory work have been performed by paid assistants of the public department, whereas, if he were treating these poor patients in his own office he would spend two or three times the amount of time and would be carrying, in addition, the expense of all history taking, laboratory work, and other accessories. Since it has been proven that from fifteen to twenty-five per cent, depending upon the character of the population, are unable to provide themselves with proper medical care and about fifteen per cent are unable to provide themselves with any medical care whatever, except institutional care as provided by public charity, it is absolutely necessary from a public health standpoint that at least those who are actually in need be cared for, and the more rapidly they receive care the less the drain on public funds.

ECONOMIC AND SOCIAL LOSS OF FORMER SYSTEMS

When we admit the facts that even today seventy-five per cent of the patients sent to our various public institutions for the care of tuberculosis are already in the advanced stages of the disease, and when we calculate that this means an actual cash loss of millions of dollars annually, we should as physicians consider it our deepest

responsibility to interpose more modern methods to discover and bring under treatment these patients earlier, if for no other reason than that of strict economy. Let our profession look these facts, as well as the facts in relation to cancer, heart disease, mental hygiene and other neglected fields, squarely in the face, and then ponder on what is to be done about it. I am sure that the answer in part will be the team work afforded by uniting our resources in local, neighborhood health centers. Whether the money be provided entirely by the government, by private philanthropy, or otherwise, the principles remain the same. Prevention is not only better but infinitely cheaper than cure. Too much money today goes into terminal work and much too little into prevention. The physician, health officer and social worker must work together in the solution of some of these general problems of medical economics.

Hall of Justice.

MEDICAL SOCIAL WORK AND PUBLIC HEALTH ACTIVITIES*

By FRANK L. KELLY, M. D.
Berkeley

BEFORE taking up the specific relationship of medical social work to the modern public health campaign it may be beneficial to consider briefly just what we mean by the term public health. At the beginning of this century there was a marked tendency to separate medical functions into preventive and treatment services. The preventive services were allocated to public health and the treatment functions to individual health. Such a distinction was entirely artificial, for it is perfectly obvious that the public health is made up of the health of every individual in the community and that we cannot have good public health unless we have good individual health.

A DEFINITION OF PUBLIC HEALTH WORK

Professor Winslow,¹ in his admirable definition of public health, does not draw any sharp line between prevention and treatment. He defines public health as

"the science and art of preventing disease, prolonging life, and promoting physical health and efficiency through organized community efforts for the sanitation of the environment, the control of community infections, the education of the individual in principles of personal hygiene, the organization of the medical and nursing service for the early diagnosis and preventive treatment of disease, and the development of the social machinery which will ensure every individual in the community a standard of living adequate for the maintenance of health."

To achieve such a result necessarily calls for the combined team work of physician, nurse, public health worker, social worker and, in fact, of every individual in the community.

* From the Department of Public Hygiene, University of California.

¹ Read before the Health Section at the California Conference of Social Workers, held in the city of Berkeley, 1931.

PIONEER SOCIAL PROBLEM STUDIES

In the beginning of the public health movement, both in this country and in England, we find that it was closely tied up with the movement for social betterment. The report of the Massachusetts Sanitary Commission, published in 1850, was drawn up by Lemuel Shattuck, a statistician and a student of social problems. He did not confine his recommendations to such public measures as water supply, sewage disposal, and sanitary police, but recommended studies of the effect of immigration on the health of the people, studies of the health of school children, better training of physicians and nurses, the keeping of family records of disease, and routine physical examinations. We see that Shattuck, in this greatest of all American public health documents, did not contemplate any marked separation of treatment and prevention but that he made recommendations tending to provide medical care and supervision for everyone, and that social betterment and health were closely allied.

PREVENTIVE MEDICINE AND SOCIAL SCIENCE WORK

With the rapid development of the scientific knowledge regarding health and disease in the latter part of the last century, preventive medicine seemed to draw away from the slower development of the social sciences. The laboratory absorbed the attention of the physician and the public health worker and they became impatient with anything that did not immediately lend itself to laboratory experiment. The development of methods of purifying water, disposing of sewage, safeguarding milk and food supplies and preventing the spread of infection showed results that could be measured statistically. Typhoid fever, yellow fever, malaria and the environmental diseases were gradually being brought under control. It was hoped to provide health for everyone whether they wished it or not, through the sanitary control of the environment in which they lived.

THE PERIOD OF WORK ON THE INDIVIDUAL

In the early part of the twentieth century the health of the individual, particularly the infant and the school child, became of interest to the health department. It was realized that some means of getting the accumulated scientific knowledge over to the people was necessary and the public health nurse was the response to this need. The control of tuberculosis, the reduction of infant mortality, the health of the school child depended on the supervision of the individual, as well as on the control of his environment. Individual family social problems became important from the public health standpoint and the necessity of close cooperation between the public health nurse and the social worker was becoming more apparent. Doctor Hastings recognized this in Toronto when he planned to house the district public health nurses in the same quarters with the social workers.

Even at this time there seemed no great need for the medical social worker in the public health program, for the whole emphasis was placed on prevention; the treatment of the patient, with the exception of the communicable diseases, was of little interest to the health department.

Let us now look at the diseases considered the main public health problems today as compared with those of thirty years ago. Statistics compiled by the American Society for the Control of Cancer show that in 1900 in the United States registration area tuberculosis caused 201 deaths, as against 81 in 1927; pneumonia 181, as against 81; heart disease 132, as against 196; nephritis 89, as against 93; cerebral hemorrhage 72, as against 84; and cancer 63, as against 96. These two pictures are quite different, and the health authorities are now faced with the problem of controlling diseases to which they gave relatively little thought thirty years ago. I think we can safely say that the greatest field for the further reduction of our mortality rates and the greatest problem facing us at the present time lie in the diseases of adult life, the diseases of the cardiovascular-renal system, cancer, the venereal diseases, and tuberculosis.

The control of these diseases does not depend alone on prevention, but just as much on early diagnosis and treatment. It may not be necessary for the health department to actually provide the diagnostic and treatment service but such service must be provided to meet the problem adequately.

All of the diseases just mentioned have several points in common, they usually tend to become chronic, they usually cause gradual loss of earning power if not arrested, they usually give rise to social and economic problems in the family, and their proper treatment and supervision depends largely on the education of the patient and the family.

EDUCATIONAL PROPAGANDA IMPORTANT

That the modern public health campaign is in the era of education is forcibly brought out when we consider the control of such diseases. Education was the great problem in tuberculosis, and education is the great problem in heart disease, cancer and the venereal diseases.

PLACE OF MEDICAL SOCIAL WORKER

Can the medical social worker be of assistance in preventing sickness and death from these diseases? If so, then she has a definite place in the public health program and takes her place with the public health nurse and the bedside nurse as an aid to the physician and the health officer.

TUBERCULOSIS, CANCER, HEART AND VENEREAL DISEASE PROBLEMS

The similarity between the problems of tuberculosis and heart disease is very striking and is well brought out by Pattison.² After showing the difference in the age groups affected, he draws attention to the close similarity as a cause of industrial disability and invalidism; to the fact

that the discovery of the heart condition is largely accidental, just as was the discovery of the early case of tuberculosis at the beginning of this century; that the patient must know his problem and how to handle it; that the public must be acquainted with the actual facts without creating cardio-phobia, as tuberculo-phobia was created in the early days of the tuberculosis campaign. He then says:

"Now begins the treatment. For the acute attack and for those cases of chronic heart disease in which decompensation is threatened or has occurred, rest in bed is the first requirement. As in active tuberculous disease, no remedy equals rest. Rest early enough in the disease, at night, and in the day; rest for weeks and months; rest of body and mind; rest from worry.

"Proper diet and fresh air are important in both diseases.

"Medication is more important in most forms of heart disease than in tuberculosis. Hydrotherapy and passive exercise, so sadly neglected in tuberculosis, are important in the management of heart trouble.

"Climate is a minor factor in both diseases. Of course, by 'climate' I do not include high altitudes.

"Graduated, supervised exercises are of supreme importance in the convalescent treatment of both groups. Walking controlled by distance is the best form of exercise during convalescence.

"Occupational therapy, by which we mean any activity, mental or physical, definitely prescribed and guided, has been exceedingly useful in the treatment of both the cardiac and the tuberculous. This includes handicraft work, nature study courses, etc.

"There are no definite standards by which to determine cardiac capacity and vital capacity in the tuberculous. The late Dr. Horace Howk well stated that 'for the rehabilitation of the modern cardiac there is required a study of his past, observation of his present, and an estimation of his future capacities.' Each individual must be studied from the standpoint of his physical condition, intellectual capacity, and character development. Without strength of character, it is difficult to recover from either disease.

"Education of the patients and their families is essential to the welfare of both the tuberculous and the cardiac. The patient must learn to live with his handicap and the family must know how to help him do it. Both the cardiac and the tuberculous are subject to relapses and recrudescences, and they must be taught how to avoid them."

Writing on the control of tuberculosis, Peers,³ in speaking of the problem of those infected but without symptoms, says:

"First, we must continue our efforts to discover those cases which are just on the borderline . . . second, we must remove the various factors of strain; or, at least mitigate their effects. . . . And really the great hope for the future lies in education; education not only of the few but of the masses; education not only regarding tuberculosis and its eradication, but education regarding all subjects relating to health and health giving habits and mode of life."

In great part, the above could be applied to cancer and the venereal diseases. It is true that each disease presents a somewhat different problem, but the control measures are largely the same; besides the general preventive measures carried on by the community, we have the medical attack, the social and economic attack, and the educational attack on each of these major problems in public health. And the medical social worker is of assistance in each of the above control measures.

FUNCTIONS OF THE MEDICAL SOCIAL WORKER

The functions of medical social work as given by MacEachern,⁴

"should be to assist the doctor in the scientific care of the patient through medical-social case study, requiring the assembling, analyzing and evaluating of all data obtained for the purpose of working out a proper medical-social plan correlated with diagnosis, treatment and follow-up; and that the secondary functions should be: (a) to assist the administration of the hospital in the better understanding of the social aspect of the patient; (b) to induce the patient to take treatment better; (c) to relieve the patient and family of physical and mental worries; (d) to cooperate with public health, welfare agencies and official bodies in promoting better community relations; (e) to cooperate with schools of nursing and universities in the education of the student nurse and social worker."

There can be no question but that the functions of the medical social worker as given above have a very definite place in the control of tuberculosis, heart disease, cancer and the venereal diseases. I do not mean that she has no place in the other public health problems such as the reduction of infant and maternal deaths, mental hygiene, etc., for she is of assistance in practically every part of the public health program. It is, however, in the above problems that it is impossible to do without her, for, she gives the physician in charge of the patient such social and economic facts as are pertinent to his adequate medical care; she interprets to the patient the physician's orders and directions, and sees that they are properly understood; she makes it possible for the patient and family to carry out the advice of the physician by making the necessary social and economic adjustments; she follows up the patient in order that adequate treatment may be carried out; she brings in for examination the contacts of those patients suffering from the disease if it is communicable; she has an opportunity for educational work in health promotion and disease prevention second to none but that of the public health nurse.

The medical social worker is giving service in some phases of health work not covered by any other workers, and in other phases is giving valuable assistance to those already in the work. There can be no question of the value of such service in the modern public health program, and the physician and clinic nurse, the health officer and public health nurse should welcome the medical-social worker as an additional member of their team which is endeavoring to provide adequate medical and nursing care for every individual in the community.

State Hygiene Laboratory.

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MEDICAL LICENSURE IN CALIFORNIA

TWENTY YEARS AGO AND TODAY

By C. B. PINKHAM, M. D.
San Francisco

IN a recent discussion of the economic problems surrounding the practice of medicine, the editor of CALIFORNIA AND WESTERN MEDICINE suggested that the writer prepare a brief paper comparing the status of medical education and licensure of twenty years ago with that of today.

NUMBER OF MEDICAL SCHOOLS

The report of the Council on Medical Education of the American Medical Association, published August 16, 1930, shows eighty-seven acceptable medical schools in the United States, as compared with 152 actively engaged in medical teaching some twenty years ago. In 1930 the eighty-seven acceptable schools in the United States were educating 21,597 students, said to be "the largest enrollment since 1909 . . ." Since 1919 there has been an average increase in enrollment of 423 students each year. It is interesting to note that 70 per cent of all the medical graduates in 1930 held collegiate degrees, as compared with only 15.3 in 1910.

COST OF MEDICAL EDUCATION

Medical education during the past twenty years has progressively developed, both in cost and duration of course of instruction. Fees have mounted from an average of \$118 annual tuition in 1910 to \$307 in 1930, with 27.6 per cent of the medical colleges requiring an annual tuition fee of from \$350 to \$450.

Significant is the comment made by the Commission on Medical Education in its 1929 report: "The present cost of medical training to the student, in both time and financial outlay, is not without an important sociological bearing. The study of medicine is becoming increasingly difficult for those of moderate circumstances, from which group of the population many of our great physicians have come. The increasing tuition charges in many schools, however, are offset by many forms of scholarships and fellowships . . ."

STATE BOARD REQUIREMENTS

State Board requirements, as reflected in the various State Medical Practice Acts, have not kept pace with advancement in medical education. The 1930 records show Wyoming to be the only state that does not require a showing of preliminary education. Delaware, Missouri, Nebraska and Nevada still maintain the comparatively obsolete preliminary education requirement of a four-year high school, whereas California, Connecticut and Pennsylvania laws demand only one year pre-medical college work. The Medical Practice Acts of thirty-nine states demand two years of pre-medical college work. Although only thirteen medical colleges require a one-year internship in order to obtain the medical degree, sixteen medical examining boards demand a one-year internship of applicants for a license to practice medicine.

PROPORTION OF PHYSICIANS TO POPULATION

It is interesting to learn that the United States has a larger supply of physicians per capita than any other country, as shown in the 1930 report of the Council on Medical Education of the American Medical Association, which lists 126.6 physicians per 200,000.

The 1910 census showed California's population as 2,377,549, with 5353 licensed physicians and surgeons, of whom 2385 were members of the state medical society. With a population of 5,677,251, California is credited in the 1931 American Medical Association directory as harboring 10,109 physicians and surgeons; however, the 1931 records of the Board of Medical Examiners show only 8662 graduates of medical schools actively engaged in the practice of medicine and surgery in our state. This discrepancy of 1447 additional physicians and surgeons listed in the 1931 American Medical Association directory comprises both unlicensed physicians from other states residing in California and 816 graduates of osteopathic schools licensed as physicians and surgeons in the state of California, under jurisdiction of the Board of Osteopathic Examiners.

Some 5019 of California's physicians and surgeons are listed as members of the California Medical Association. It is evident that both California's licensed medical college graduates and the membership in the California Medical Association has kept pace with California's increase in population.

CALIFORNIA LICENTIATES IN SECTARIAN GROUPS

In discussing our economic problem in California, we must keep in mind those licensed by the Board of Osteopathic Examiners and the Board of Chiropractic Examiners, the former, according to the 1931 record, totaling 1480 licentiates and the latter totaling approximately 2747.

WHAT PRESENT DAY MEDICAL STUDENT FACES

Brave indeed is the student who decides to become a medical practitioner after contemplation of the increased cost of medical education, the added time required to complete the course, the curtailment of the sphere of practice through modern preventive medicine, now rapidly lessening the heretofore prevalent diseases, the inroads of various nursing services, hospital associations, health centers, welfare organizations and a host of other lay activities rapidly assuming the prerogative of treatment of the sick and afflicted.

623 State Building.

DISCUSSION

ON PAPERS OF DOCTORS GRAVES, CROSBY, BROWN, FRENCH, REYNOLDS, POMEROY, KELLY, AND PINKHAM

LYELL CARY KINNEY, M. D. (1831 Fourth Street, San Diego).—This symposium on medical economics, consisting of the papers presented at the San Francisco meeting, is a complete and accurate survey. We should congratulate these authors on the keen analysis and the clear, forceful statement that characterizes this presentation and we should appreciate the vast amount of investigation upon which it is based. The spirit of optimism that flows through these papers

is most encouraging. The danger of an attitude of indifference, of laissez-faire, or of "static defense" only emphasizes the need for efficient organization and constructive effort. Throughout is the promise that the California Medical Association can supply the need of adequate medical care for all classes and can meet the requirements of preventive medicine.

Doctors Graves, Crosby, Brown, and French have each presented the need for a bureau of public relations in charge of a full-time highly trained executive. Each of them has pointed out as a major problem the distribution of medical costs on an insurance basis. Therefore this bureau should have liaison with the best actuarial experts and the foremost insurance leaders in the country. It will come within the province of this bureau to apply to our California problems the findings of the national Committee on the Costs of Medical Care and of other national committees and economic foundations. The scope would include cooperation with our component county societies in the study and care of the needs peculiar to each community. The bureau could assist the county societies in developing definite policies in public relations and could stimulate cooperation in public health and social service activities. The importance of such a bureau cannot be overestimated. As Dr. E. Starr Judd, president of the American Medical Association, stated in regard to the similar activity of the American Medical Association: "This bureau must have the best man-power that can be obtained."

Our standing committees of the California Medical Association are giving generously of time and effort in their investigations and work for our Association, but they need the cooperation of a full-time efficient bureau if this great organization is to meet its obligations in the prevention of disease and the distribution of adequate medical care.

The California Medical Association should weigh seriously Doctor Crosby's suggestion of a Chair of Medical Economics in each of our medical colleges. It will aid materially in the solution of our problems if the future graduates in medicine are thoroughly acquainted with the social, economic and business phases of medical practice.

It is interesting that one author has singled out all laboratory and x-ray work, the treatment of allergy and syphilis, as the factors of medicine that should be socialized. He contrasts these with "the skill, training, and experience of the physician and his ability to handle the case." It would be just as logical to include all minor surgery, normal deliveries, and routine nose and throat treatments in this group. There is certainly no phase of medicine that requires greater clinical experience or more dependable medical and surgical judgment than any one of these four which he has chosen to place under government control. This sacrifice to the gods would not stem the tide, and certainly would not make for better medicine or more adequate medical care. However, a careful evaluation of our methods and a searching self-appraisal of our relations with the public are necessary if the profession is to adjust itself to modern conditions.

RODNEY YOELL, M. D. (490 Post Street, San Francisco).—The group of articles published in this number of CALIFORNIA AND WESTERN MEDICINE is significant in that it demonstrates to the medical profession recognition of the fact that some change in the present system of the practice of medicine is imminent.

Whether one takes a conservative view with Doctor Graves, or is willing to step into at least a tepid communism with Doctor Reynolds, or else see, mind to mind, with the "cooperative social urge" of Doctor Brown, is a matter of some preference and considerable choice; but that the inevitability of change in the present system is apparent should be patent to all.

It would seem to the writer that three definite factors have to be considered which, even in spite of the magnitude of the problem, loom large and

distinct from the sea surface of theories, truths, and half-truths which float about their bases:

First: A change will come inevitably, due to the economic evolution in this country similar to the industrial revolution in Europe of some sixty to seventy years ago. This change will be expressed by laws regulating medical service and under these laws the profession must work and develop.

Second: This evolution will tend to generate laws under which lay domination will be forced upon the profession. If, however, the profession be wise, it can mould these laws into a form more in consonance with its own desires and, because of the inherent technical knowledge possessed by the profession on this subject, it can and should develop these laws to the best interests of the public and without damaging itself.

Third: The endeavor to meet the cost of health by appropriate legislation will follow either one of two forms: that is (1) a direct state aid, or a subsidy in some form from governmental resources; or (2) the much more preferable instrument of insurance can be used in this field, as it has been applied in alleviating fire, theft, and damage losses.

We must recognize from all available data that practically only 25 per cent of the total cost of illness is paid to the profession. To curtail the cost in this direction, therefore, bespeaks for a definite lowering of the economic and social standards of the members of the medical profession, and should be fought persistently, logically, and intensely.

The fact that the health-cost problem lies not in this sphere should be clearly emphasized, and it should be, furthermore, demonstrated that the basic maintenance rate, namely, *the rate at which a patient can be maintained* even before the healing agencies are brought to his aid, is the field for our most intense inquiry. These items of purely animal needs, such as food, housing, heat and sanitation, apply to the well equally with the sick and should not be written into inquiries of health cost matters as items of purely medical expense. "Maintenance rate" is one item, the cost of "healing agencies" another. To supply the former is definitely a sociological problem and the mechanics of meeting their costs must be framed by laws sanely and soundly drawn.

To justify active participation by the state or its agencies in furnishing basic cost funds, one must certainly develop a social doctrine not only new to this country, but indeed one that heretofore has been held to be the antithesis of our at present accepted basic political philosophy.

It would mean because a man is ill he could by right look to the state to furnish and finance material which admittedly he has no right to during his well or health periods. In other words, sickness compels the state to furnish food, clothing, housing, etc., to a citizen from its own resources irrespective of whether the man can, has been able, or could be able to furnish the cost of these items himself.

One feels that even the slightest wedge which is permitted to enter in the application of this theory, whether as to the costs of laboratories, x-ray examinations, et cetera, will ultimately insinuate itself so far into our political system as to cleave it entirely. England's "dole system" exemplifies this.

Therefore let medical men be guarded before they urge this procedure under misguided and seemingly plausible statements of "state aid at cost" or "the duties of the profession to furnish health protection" at the lowest possible cost figure.

The right to practice is a "property right," and if we neglect to insist on its maintenance as such we are in the same position as a merchant who, knowing that food control is somewhat a matter of governmental concern, would tolerate the furnishing of food materials free or at cost by the state to individuals who in the recognized scheme of things should be able to buy and pay for such food materials themselves.

The other alternative, namely, that of social insurance, eliminates these difficulties and would seem to

be the logical development of our political philosophy. Far from placing our citizenry on the same level as a European peasantry, it would furnish adequate funds to meet the cost of illness, *and raise these same funds by private effort, but under governmental sanction.* Each individual, unless he be absolutely indigent, would be required to allocate certain of his resources against the inevitable period of illness. These funds, utilized as insurance, would and could unquestionably care for the greater percentages of illness striking the greatest number of people. The entire white collar class, about which so many crocodile tears have been shed, could in this fashion fend for itself and maintain its respectability without requiring the medical profession to surrender its independence and place itself under what would unquestionably be a political bureaucratic system of lay control of the practice of medicine.

Several funds are now so working. The Endicott-Johnson plan, for example, runs for about \$21.50 per year per family and this would seem to be adequate to furnish the essentials for meeting the cost of health. Actuarial data should be gathered on this question with the end in view that personal insurance carried by the individual under sanction and supervision by the state should be the goal to be achieved.

Compulsory insurance has an ominous sound in the use of the word "compulsory," but the essence of government lies in its very ability to compel individual action, provided such authority has previously been given by its component members.

Surely the state could require merely the most commonplace type of forethought as a social duty obligatory on its citizens, rather than split our social structure and place an entire profession and its rights under the domination of lay political appointees.

These matters require the closest scrutiny. General statements of the happy condition of Europeans under native systems should be judged by actual personal observation; after which much of their glamour is lost. Doctor Crosby does well to call attention to Denmark's reversal to the old type of practice, and it is well known that in England the average person jumps his panel as soon as he is financially able to seek medical aid for himself.

No apologies are needed for the profession's attitude toward the public. In the main our banners are clean and unsullied. We should continue to carry them so, but carry them we must into fields of battle which will be hotly contested. False issues and the siren songs of plausible theories are legion. We must recognize the basic principles from which we draw our strength and fight to maintain these at all costs.

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JOHN C. RUDDOCK, M. D. (1930 Wilshire Boulevard, Los Angeles).—The stupendous task as outlined by Dr. John H. Graves in his report brings out the fact of the various ramifications of any problem dealing with medical economics. To note the complexity of the subject as evidenced by seven different papers, dealing with seven different phases of the same subject, brings to mind the famous motto of a Greek philosopher, "There is no panacea for all ills."

Dr. Rexwald Brown has hinted in his last paragraph at a phase that has a very direct bearing on the solution of the problem of medical economics; and it is the biggest argument against state medicine, medical services, hospital organizations, health insurance, and like activities. To adopt a major premise that the services of all men practicing medicine are the same is, unfortunately, not true. Taking for granted that the medical training of all physicians is exactly the same, there is, however, a marked difference in (1) reasoning power; (2) personality; (3) tact; (4) industry; (5) progressiveness; (6) sympathy; and (7) kindness.

These cardinal virtues make the successful practitioner in medicine.

The competency and equality of medical service is not assured to the people under the many divergent laws enacted throughout the United States and the

personnel making up the various licensing boards. To a great mass of citizens the term "doctor," whether he be regular, osteopath, chiropractor, optometrist, physiotherapist, or cultist, is the same. Their judgment and opinion carries equal weight.

Brains cannot be standardized, which we as medical men should know. If this were possible, then it would be simple to adopt a state-wide standard fee schedule or adopt a state-wide socialized medical program. The art and the practice of medicine always has been and must always be individualistic if the "service to the patient" is paramount.

CIRCULATORY CHANGES DURING SPINAL ANESTHESIA*

By M. H. SEEVERS, Ph. D.

AND

R. M. WATERS, M. D.

Madison, Wisconsin

A COMPREHENSIVE study of the factors involved in the circulatory depression accompanying spinal anesthesia has been retarded by the generally accepted belief that visceral vasodilatation resulting from splanchnic nerve paralysis is responsible for the major part of the syndrome. Some of the recorded advantages of spinal anesthesia are "contracted viscera," "absence of bleeding from gastrointestinal operations," "bloodless Cesarean sections," and comment as to the anemic appearance of the viscera during laparotomy. If the altered distribution of blood to the splanchnic area were responsible for such a profound fall in blood pressure as sometimes accompanies spinal anesthesia, one should have no difficulty in demonstrating a greater quantity of blood in the viscera.

It is interesting that very little attempt is made to correlate these paradoxical statements, especially in view of the fact that a subarachnoid block as high as the nipple line involves other structures than the region innervated by the splanchnic nerves. Physiologists have long recognized that the normal tone and contractility of skeletal muscle play a major rôle in the movements of capillary and venous blood. Functional severance of the motor nerves to over half the skeletal muscles must at least be considered a factor.

A secondary if not so important a factor in the control of tone of blood vessel musculature, is the acid-base balance of the blood. Increase in the H-ion concentration is known definitely to produce a lowered tone of vascular muscle. That this increase occurs in spinal anesthesia will be made evident later in this paper.

An additional factor which has been largely overlooked is intercostal nerve paralysis. In view of evidence presented before and confirmed in the present paper, it is one of prime importance. Gray and Parsons,¹ in a clinical study of the subject published in 1912, attribute the "main fall" of blood pressure to "thoracic paralysis

* From the Departments of Pharmacology and Anesthesia, University of Wisconsin Medical School.

¹ Preliminary report. Extended studies will be reported elsewhere. Read before the general meeting of the California Medical Association, at the sixtieth annual session, San Francisco, April 27-30, 1931.

which is not compensated for by overaction of the diaphragm and consequently the aspiration action of the thorax is diminished." They attribute the inability of the diaphragm to adequately compensate to the flaccid paralysis of the musculature of the abdominal wall. They suggest that the resultant lowering of intra-abdominal pressure diminishes the normal pressure on the abdominal veins.

To completely ignore paralysis of splanchnic nerves and vasoconstrictor nerves to the skin and skeletal muscle of the region anesthetized, as factors concerned in the circulatory depression, would be as shortsighted as to consider them alone as responsible. It is obvious that an interruption of the normal pressor pathways to these regions prevents a compensatory constriction to combat the depression resulting from the increased capillary and venous bed in skeletal muscle. Furthermore, an extremely low arterial pressure with its attendant medullary anemia and partial anoxemia is known to depress the sensitivity of the vasoconstrictor center. This being the case, compensation by vasoconstriction in those regions not involved in the block is rendered more and more difficult. A vicious cycle is gradually established: low blood pressure, lowered central vasoconstrictor tone, further lowering of blood pressure.

ROLE OF OXYGEN IN CIRCULATORY DEPRESSION

A searching analysis of all the factors involved leads us eventually to the point where we must question as to whether oxygen want should be considered as a primary or a secondary cause of the circulatory depression. When carefully considered, all must agree that the whole problem ultimately centers itself on the supply of oxygen to the medullary centers, the heart and vascular tree. Authorities may disagree as to the stimulant or depressant effect on cells of mild degree of oxygen want, but there is no disagreement as to the effects of severe grades of anoxemia. That the result is depression remains unquestioned.

A survey of all the methods used in the treatment of circulatory depression accompanying spinal anesthesia, whether these be pressor drugs, posture, cardiac stimulants or other means, leads one to the conclusion that anesthetists are trying to accomplish the same purpose, namely, to supply oxygen to those cells which give evidence of depression. Why then have anesthetists largely disregarded the easiest method of supplying this lack, namely, furnishing to the patient oxygen-rich atmospheres. Attempts have been made in this direction by instructing the patient to breathe deeply. Those clinicians who have tried this method agree as to its beneficial effect.

BASIS OF THE PRESENT STUDY

The present study is an outgrowth of the clinical observation that patients with spinal anesthesia, when breathing oxygen-rich mixtures, maintained a better blood pressure, felt better subjectively, were less nauseated, and made a better postoperative recovery (other factors such as preoperative medication, posture, et cetera,

remaining equal) than those breathing unfortified air. The hyperpnea and increased oxygenation associated with inhalation anesthesia when superimposed upon spinal block often results in an improvement in blood pressure.

Analysis of blood and alveolar oxygen in patients with spinal anesthesia and arterial blood gases in dogs under similar conditions confirmed our original belief that the oxygen tension in the tissues must be relatively low during the period of circulatory and respiratory depression. Samples of venous blood following a spinal anesthesia with circulatory depression revealed a lowered oxygen content and capacity with a raised CO_2 content, diminished CO_2 capacity, and a decreased pH. Increase in CO_2 content with decrease in the pH would of course increase the dissociation of oxyhemoglobin and diminish its capacity to carry oxygen. Samples of alveolar air reveal about the same grade of oxygen shortage and CO_2 increase that accompanies other respiratory depressants, the barbiturates, etc. Deficient lung ventilation and associated circulatory depression allow an accumulation of CO_2 in tissues. As mentioned before, this is probably a considerable factor in lowering the tone of vascular muscle.

Isenberger and Lundy,² as part of a study on untoward reactions during block anesthesia, personally communicate to the authors the following unpublished experiment. A dog weighing thirty kilograms was given 2500 milligrams of procaine (50 per cent concentration) in the lumbar region with a resultant complete paralysis of the central nervous system. The animal was kept alive ten hours, adequately ventilated by alternate inflation and deflation of the chest. During this time, without the use of stimulation and with the animal in the horizontal position, no change in blood pressure or pulse rate was observed. Another animal given 1250 milligrams was respired five hours without noticeable change in pulse rate or blood pressure. In each case the diaphragm became active and it was possible to discontinue the use of the respiration machine.

North and Ferguson,³ working in Ravdin's laboratory at the University of Pennsylvania, recently communicated to the authors the results of an unpublished experimental study of spinal anesthesia. At the time of writing they had arrived at the following conclusions:

1. "Section of the splanchnic nerves does not cause a fall of blood pressure which is comparable to that seen after the injection of novocaine for spinal anesthesia.
2. "Injection of the anesthetic after the placing of a ligature below the fifth thoracic segment does not cause a fall in blood pressure similar to that found in spinal anesthesia.
3. "Injection of the anesthetic above the ligature will cause a drop in blood pressure.
4. "The fall of blood pressure is not due to the systemic absorption of novocaine.
5. "The fall in blood pressure occurs with a slowing, diminution or a falling out of thoracic respiration.

6. "The fall in blood pressure is proportional to the number of sympathetic fibers paralyzed by the anesthetic."

EXPERIMENTAL EVIDENCE

By means of the experiments herein presented we attempted to answer the following questions:

1. Is artificial respiration, which simulates normal respiration, effective because it maintains the normal condition of intrathoracic pressure, thereby partially maintaining an artificial circulation, normal or nearly normal cardiac output, etc., or because it produces an adequate ventilation and proper oxygenation of blood, or both?

2. How much of a factor is splanchnic paralysis?

3. Is ephedrin effective in combating the circulatory depression of spinal anesthesia and, if so, what factors determine its ability to raise a lowered pressure or maintain the original pressure?

The large majority of the following experiments were performed under sodium barbital anesthesia in dosage of 250 milligram/kilogram administered intravenously. We found this dosage in the average dog to produce no marked change in the systolic blood pressure, although the pulse pressure was considerably reduced.

This anesthetic was necessary during the initial experiments in order to perform laminectomy for subarachnoid injection. It is difficult to be positive of a subdural block by ordinary puncture in the dog due to the position of the spinous processes. Recently we have constructed a hollow trephine just large enough to permit the passage of an ordinary spinal needle so that injection at any level may be accomplished in the intact animal. An ordinary three-inch 17-gauge needle is milled with cutting teeth. The lamina can be traversed very rapidly, the trephine left in situ, and the smallest needles introduced through the dura without danger of leakage. The use of sodium barbital as an anesthetic has been controlled by performing experiments under nitrous oxide and ethylene, and by infiltration anesthesia alone.

In comparing the effect of arachnoid injections of novocaine in the anesthetized dog (sodium barbital or gas) with the unanesthetized dog (infiltration), we observed a greater reaction to a block of similar height in the former. However, the results were quantitatively rather than qualitatively different. We likewise observed more of a circulatory depression following pre-operative administration of morphin-scopolamin than in animals not receiving such medication. It would appear that any procedure which alters the ability of the cell to utilize oxygen, or diminishes minute volume respiration, or causes skeletal muscle relaxation, when superimposed upon spinal block, will aggravate the circulatory depression. In view of these observations, premedication clinically with any of the depressant drugs, unless compensated for by respiratory stimulants or the exhibition of oxygen-rich atmosphere, may be expected to contribute to the low blood pressure.

In order to determine the relative importance of the previously considered factors, the following experiments were performed on dogs. The dura was exposed by laminectomy at the fifth thoracic segment and at the seventh cervical segment. Ligatures were placed so as to compress the dura and obliterate the subdural space at the point of ligature. Novocaine solutions were injected in sufficient quantity to produce both motor and sensory paralysis below the fifth thoracic segment, between the fifth thoracic segment and the seventh cervical segment, and above the seventh cervical segment. The cord was also sectioned at these levels in different experiments.

The following results were obtained:

1. Section of the cord at the fifth thoracic segment resulted in a slight drop in systolic pressure of 5-10 millimeters of Hg.

2. Section of the cord at the seventh cervical segment resulted in a drop in blood pressure to 35-40 millimeters systolic.

3. Subarachnoid injection of novocaine below the ligature at the fifth thoracic segment resulted in a slight drop of 5-10 millimeters in systolic pressure.

4. Injection of novocaine between ligatures placed at the fifth thoracic segment and the seventh cervical segment produced a fall in systolic blood pressure to 40-50 millimeters of Hg.

5. Injection of novocaine above and below a ligature at the seventh cervical segment caused an almost immediate cessation of respiration with a drop of systolic pressure to 0.

6. Neither double vagotomy nor bilateral extirpation of the stellate ganglia or both have any marked influence on the circulatory reaction to cord section or high spinal block.

These findings agree closely with the clinical observation that spinal anesthesia, which involves none of the thoracic musculature, carries with it little danger from circulatory depression.

In view of the clinical observations of Gray and Parsons and the conclusions of North and Ferguson from animal experimentation, coupled with the evidence presented herein, we must arrive at the conclusion that splanchnic paralysis is at most only a contributory factor in the circulatory depression. Moreover, complete cord section above the origin of the splanchnics produces only the slight drop in blood pressure, termed by Gray and Parsons the "preliminary fall" as contrasted to the "main fall" accompanying complete thoracic paralysis.

We were impressed with the close parallelism existing between the extent of intercostal paralysis and the degree of circulatory depression. The intercostal nerves, therefore, were isolated under barbital anesthesia, blood pressure record taken, and intercostal nerves sectioned. Blood pressure dropped gradually in twenty-four minutes from an original systolic of 116 to 50 millimeters Hg. The gradual drop suggested that the fall of blood pressure was largely secondary to increasing oxygen want. It is logical to assume that were the effect merely a mechanical one of a

diminution in normal negative intrathoracic pressure, a more rapid blood pressure fall should ensue.

To study the effect of maintaining a normal or nearly normal chest activity in the presence of total intercostal paralysis following cord section and novocaine block, we constructed a box on the principle of the Drinker artificial respiration apparatus. The body of the animal is placed within the box, the head and neck protruding through a rubber dam. Rhythmic alterations of negative and positive pressures created within this box compress and distend the thorax to produce a nearly normal chest activity.

Using this device, it was observed that we could maintain the original blood pressure after a cord section at the seventh cervical segment or after a sensory and motor paralysis produced by intradural novocaine injections involving the whole central nervous system, in both the barbitalized and unanesthetized dogs. This confirmed the unpublished experiments of Isenberger and Lundy. We were still at a loss as to whether our result was due only to active chest movements with its mechanical aspiration of venous blood or to good ventilation of the lungs and proper oxygen supply. That both factors are concerned was evidenced by the following typical experiment.

A dog was given thirty milligrams morphin sulphate and one milligram scopolamine hydrobromide. Spinal anesthesia was induced to a height where all intercostal activity was paralyzed. Systolic pressure dropped from 180 millimeters Hg to 80 millimeters Hg and was on the down grade. Artificial respiration by the Drinker type respirator immediately brought the blood pressure to 200 systolic. Several periods of anoxemia induced by stopping the respirator, again brought the pressure down to 70. After each period of low blood pressure, chest movements induced by the respirator were less effective in bringing blood pressure back to normal. With respirator in constant action, a systolic pressure was finally established at 120 millimeters Hg. Increase of oxygen supply, effected by passing oxygen through a nasal catheter, in a short time brought the blood pressure to 200, where it was maintained. With oxygen cut off, blood pressure again established itself at a level of 120 millimeters Hg. Oxygen-enriched air always caused a rise of blood pressure even in the presence of relatively normal chest movements. This was similarly observed many times also in animals receiving barbitol as a basic general anesthetic.

EPHEDRIN

Ephedrin, given prophylactically previous to subarachnoid block, has many advocates.⁴ Others have considered such a procedure of little value. Still others have expressed the belief that attempts to prevent circulatory depression in spinal anesthesia by the use of ephedrin were not only without value but fraught with danger. Regarding its clinical application, we can say that if administered in dosage which will maintain only

the original blood pressure, we have seen no untoward effects. From our experimental work definite conclusions can be drawn.

Ephedrin, in dosage of one to two milligram/kilogram, is effective in maintaining the original blood pressure in the dog for one to three hours after cord section or novocaine sensory and motor paralysis as high as the seventh cervical segment. This holds good whether the drug is given intramuscularly or intravenously before induction of anesthesia, or intravenously after the fall of blood pressure. If given intramuscularly after a fall of blood pressure, a latent period for absorption must be expected. When marked circulatory depression is present at the time of intramuscular injection, slow absorption, coupled with anoxemia, may entirely prevent a beneficial result. In a certain number of cases death may supervene before it is systemically absorbed. The effectiveness of this artificial support of blood pressure by drug action is directly dependent upon adequate oxygenation of tissues. We have observed that after long periods of partial anoxemia or following delayed attempts to administer the drug when blood pressure is extremely low (thirty to forty millimeters Hg), it not only fails to produce a response but probably actually damages the heart. That it may be a poor drug to administer following an extended period of extreme circulatory depression from a spinal anesthesia is obvious on the basis of these experiments.

No one questions the potential toxicity of ephedrin. Chen and Meek⁵ have shown by electrocardiographic studies that it produces a progressive paralysis of the conduction bundle and ultimately ventricular fibrillation. In the normal man or animal, the dosage which will produce these effects is probably far in excess of the amount required to sustain normal blood pressure following spinal anesthesia. It is reasonable to suppose that a heart already severely injured by anoxemia or organic disease may be only further poisoned by such a substance as ephedrin. It is our belief that the majority of the clinical cases, in which ephedrin has produced injury, fall into this category. It must be admitted furthermore that certain cardiopaths may not well tolerate ephedrin. We have observed that blood pressure supported artificially by ephedrin falls immediately with a relatively slight degree of anoxemia. Inhalation of 100 per cent nitrous oxid or ethylene after high spinal anesthesia with ephedrin, causes an instantaneous drop in blood pressure to a basal level with no indication of the usual asphyxial rise. Moreover, exhibition of oxygen without change in respiratory activity after ephedrin will initiate vagal beats and cause an increase of blood pressure of ten to twenty millimeters of Hg, thus augmenting its desired therapeutic effects.

On the basis of these observations, ephedrin should be administered at a time when tissue oxygenation is good. We believe the effectiveness of this drug to be directly proportional to the oxygen available for use by the cells affected. We have administered ephedrin intravenously to

patients immediately after the maximal drop in blood pressure. It was given symptomatically, using repeated blood pressure and pulse readings as a criterion of dosage. We attempted to bring the pressure only to its preoperative level. The results were entirely satisfactory. If the dosage by this method is such that no hypertension is produced, we believe very little damage to the patient will result. Slow injection and careful control of physical signs are necessary. The inaccessibility of superficial veins after the patient is draped for operation would suggest, however, the continued prophylactic use of ephedrin before induction of anesthesia. The intravenous administration should probably be reserved for emergencies where insufficient dosage has been previously administered. Accompanying attention to oxygenation of the blood is essential.

We wish to lay stress on the many factors involved in such a complex mechanism as high spinal block. Our brief outline of the major factors involved is probably incomplete. Emphasizing one factor to the exclusion of all others in a given complex tends to mislead those whose scrutiny of a subject is superficial. Detailed experimental data upon which this preliminary report is based will be published elsewhere.

CONCLUSIONS

1. Cellular oxygen want *per se* is one of the prime factors in the circulatory depression accompanying spinal anesthesia.

2. Decrease in the oxygen content and increased CO₂ content of the blood is present when blood pressure is low in spinal anesthesia.

3. Under high spinal anesthesia with some degree of intercostal paralysis, the circulatory condition is improved when oxygen-rich air is inhaled.

4. The fall of blood pressure in spinal anesthesia tends to be synchronous with and proportional to the amount of intercostal muscle paralysis produced.

5. Efficient two-phase artificial respiration will maintain normal blood pressure in presence of cord section at the seventh cervical segment or novocain motor and sensory root paralysis of the whole central nervous system.

6. Under high spinal anesthesia, even when blood pressure has been sustained with ephedrin, there is hypersensitivity to anoxemia. No primary asphyxial rise in systolic pressure occurs.

7. Ephedrin in varying dosage tends to maintain normal blood pressure when administered previous to induction of high spinal block.

8. After the blood pressure drop in high spinal anesthesia, ephedrin is less prompt and less effective if administered other than by intravenous injection.

9. When low blood pressure is present from causes other than spinal paralysis, such as extensive hemorrhage, or prolonged anoxemia, ephedrin may fail to restore blood pressure even when given intravenously.

10. High oxygen content of blood augments the beneficial effect of ephedrin.

11. We have not yet seen evidence of circulatory or other damage from ephedrin if the dose is limited to that sufficient to restore normal blood pressure, provided the tissues are adequately oxygenated.

12. Cord section at the fifth thoracic segment or complete novocain paralysis below this point produces no marked change in blood pressure in the normal dog.

13. With our present knowledge, treatment of accidents following spinal anesthesia should consist of two-phase artificial respiration (preferably with oxygen) plus intravenous ephedrin in such dosage that blood pressure is maintained at the preanesthetic level. Existing fluid deficit should of course be made good.

14. Circulatory depression following high spinal anesthesia with intercostal paralysis is much more marked in animals anesthetized with barbital, ethylene, nitrous oxid, or having morphin-scopolamin as a preoperative sedative, than in the unanesthetized animal.

University of Wisconsin.

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LEUKOPENIA—A REVIEW: WITH SPECIAL REFERENCE TO AGRANULOCYTIC ANGINA*

PART II

By O. H. PERRY PEPPER, M. D.
Philadelphia, Penn.

BACTERIOLOGY.—As might be expected, if the hypothesis of a primary leukopenia and secondary invasion is correct, a number of widely differing bacteriological findings have been reported. Some reports of positive blood cultures have clearly been from instances of overwhelming infection and were not cases of agranulocytic angina. A terminal blood stream invasion, however, may occur in this condition. Cultures from

* Stanley Black Memorial Lecture delivered at Pasadena, January 12, 1931. Part I in August issue, page 82.
Editor's Note.—The annual Stanley P. Black Memorial Lecture at Pasadena is given in memory of the late Stanley P. Black, a graduate of Northwestern, class of 1887, who came to California in 1897. Doctor Black was professor of pathology in the old College of Medicine of the University of California, was health officer of Pasadena for years, and at all times maintained an active interest in public health work. He had much to do with the Certified Milk Commission of Los Angeles. After his death on February 4, 1921, his friends united in getting up a memorial fund, which sponsors the annual Stanley P. Black Memorial Lecture.

the local lesions probably represent the individual's normal throat or gut flora. It is perhaps noteworthy that *B. pyocyaneus* has been found oftener than might be expected and that it is with this organism that Lovett claims to have produced a closely analogous picture in guinea pigs. Cultures from the bone marrow have not been successful.

As might be anticipated, Vincent's organisms have often been found in the ulcers of the tonsils, pharynx, larynx, and gums. Lesions in these locations are usually rapidly invaded by Vincent's organisms and one should be very cautious in attributing any etiologic significance to their presence. No report of invasion of internal organs or bone marrow by these organisms has come to my attention. In the early days of our knowledge of this syndrome much importance was attributed to the organisms of Vincent, but it is now generally believed that they are secondary invaders, although perhaps important in continuing the process. Buch¹² observed that the Vincent's organisms did not appear in the ulcerations until after several days.

Predisposing Causes.—The first reports seemed to limit the disease to women; later an occasional male case was discovered, but all statistics point to a greater prevalence in women (Friedemann,¹³ twenty-four women; five men). No age is immune; the records include patients from two weeks to sixty-six years of age. No seasonal incidence has appeared, nor has any geographic influence been observed. The condition is apparently not contagious nor familial.

Many of the cases have been under observation by a physician for a variety of troubles at the time of onset, others in perfect health. Perhaps poor general condition predisposes, but also the syndrome may have been more often recognized when the patient had already been under a doctor's care. Many instances have developed following extraction of a tooth because of peridental infection. This was true in the case of one of our nurses. In other cases, tonsillectomy seems to have precipitated the onset. In a man whom I saw in consultation, puncture of the antrum preceded the onset of the throat ulceration by six days.

Symptoms.—In the earlier reports, and even in some recent ones, the statement is made that the onset is always sudden with sore throat or the symptoms of a "cold," high fever and severe prostration. When a blood count was taken the characteristic leukopenia was revealed. Other symptoms due to local ulceration may appear as, for example, dysphagia or pain on defecation. Jaundice is often present. The course was supposed to be progressively downward with death occurring in four to eight days, although it was even then appreciated that a few recovered slowly, only to succumb, it was believed, in a relapse.

It is true that this picture is often seen, but we have learned that many far milder cases occur, and that often an individual may have many attacks of varying degrees of mildness or severity.

Severe Form.—In the characteristic severe attack, the patient is highly febrile and may exhibit the early evidences of dehydration. The fever curve is not characteristic; fever, in fact, may be trifling or even absent at first, gradually rising to reach 103 or 104 degrees within a day or two. Occasionally a chill occurs. The prostration is often intense and there may be general malaise. Distinct joint pains have been reported, but my experience does not include this observation. With the higher fever, delirium may appear. This systemic picture is not pathognomonic.

Sore throat or tender gums have been the first local complaint in the vast majority of cases. At first there is only an edema or sponginess, but ulceration and necrosis soon follow. The local pain may be considerable; chewing or swallowing may be agonizing, and the regional lymph nodes become enlarged and painful. The spleen and distant lymph nodes may also enlarge. Within two or three days the necrosis becomes more extensive without corresponding increase of pain.

At the height of the attack the heart rate is increased, the blood pressure lowered and the base of the lungs may be congested. The general picture may resemble that of severe septic infection and death seems to result from toxemia. When improvement occurs, it will show itself by lowered fever, lessened toxicity, and the appearance of granular leukocytes in the blood before any distinct change for the better takes place in the local lesions. These are slow to heal; large necrotic sloughs finally becoming loosened and removable. Bits of necrotic bone may continue to be discharged when the ulcers have involved the alveolus. Convalescence is slow both as to the general strength, the local healing, and the restoration of the white cell count to normal. Remissions and second attacks are common.

Mild Form.—As I have said we now recognize the occurrence of attacks far milder than this, and yet in their character justifying our belief that they belong in the same group. A strong argument in favor of this view is the fact that these mild attacks occur as a rule in individuals who have had one or more of the severer forms.

One cannot be sure that all patients who have severe attacks also have mild recurrences. The histories of many fail to reveal any incidents which might be so interpreted, but usually this feature has not been looked for. However, the nurse whose case I have mentioned has not had any recurrences although we have watched for them most carefully. On the other hand, we have a woman in the hospital at this time who has had one or two severe attacks and several mild or abortive ones. These latter have been characterized by a feeling of malaise, a sponginess of the gums, little or no fever, but a distinct drop in the total white count due to disappearance of granular forms.

Her history is interesting. The first proved attack was in March 1930 in our hospital, but her description of a "sore throat" in 1928 and of four similar recurrences in 1929 make me be-

lieve that these were agranulocytic in nature. In her first admission she presented a typical picture in every way except that the blood platelets were reduced as well as the leukocytes. She recovered and left the hospital, after a number of normal white cell counts had been obtained. Twelve days later she was back in another attack; on this visit the lowest total count was 600 with no granular leukocytes seen in a long search. When her local lesions had healed and the count reached 5700 a tooth was extracted without local reaction, but two days later, when we were getting our nerve up to have tonsillectomy performed, the gums became spongy and in five days the total count had fallen to 2800. Operation was postponed and in four days the gums were well and the count 5300. Tonsillectomy has now been performed with a prompt rise in white cells to over 7000, a level never before recorded in her case.

Similarly a male case studied by me in Philadelphia and by Minot in Boston has had many trifling abortive attacks, without distinct local lesions but with a coincident fall in white cell count.

Such evidence as this has very decidedly altered the earlier views and has forced us to start building up a far different concept of the nature of the syndrome. The frequent repetition of attacks of varying severity, commencing with leukopenia and only secondarily and not always progressing to severe systemic reaction and local necroses contradicts the hypothesis that the leukopenia of agranulocytic angina results from an overwhelming anginal infection.

Recurrent Agranulocytosis.—Finally a case report by Rutledge, Hansen-Prüss, and W. S. Thayer¹⁴ of Johns Hopkins seems to carry our changing conception of the disease one step further. Their case is reported under the title "Recurrent Agranulocytosis" which is used instead of agranulocytic angina because the basic condition, a cyclic leukopenia, is not always accompanied by angina. Their patient, now a man of twenty years of age, presents, to quote their words, "a remarkable instance of cyclic, agranulocytic angina associated with fever and constitutional symptoms but without anemia, beginning at the age of two and one-half months, and recurring at intervals of approximately three weeks during the entire life of a man twenty years of age."

This very remarkable case is unique, but two of the patients whom I have seen, on being carefully questioned described what might have been repeated earlier milder attacks. Probably similar cases will be discovered.

COMMENT

As a result of our growing body of experience, I think you will agree that certain statements about agranulocytic angina seem justified:

1. The evidence is sufficient for us to conclude that the leukopenia precedes the ulceration, fever, or other systemic manifestations.

2. This leukopenia is not merely a manifestation of one of the well-recognized causes of

leukopenia such as that following arsphenamin, or that occurring in overwhelming sepsis.

3. The angina and other ulcerations are secondary and merely represent the invasion by an opportunist flora of a poorly defended body border. Such ulcerations do not always occur. These assumptions explain the nonspecificity of the flora, and the likelihood of local invasion by Vincent's organism. Possibly the ulcerations once established tend to prolong and intensify the leukopenia.

4. For the present, we must group together cases and attacks of very varying severity; at the one end of the scale such a case as that reported from Johns Hopkins and at the other end, fulminant cases dying in what appears to be a first attack.

5. No cause for the apparently spontaneous leukopenia has been discovered. It must be such as to permit of its periodic action over a prolonged period of otherwise normal health.

6. It seems theoretically likely that those attacks which are apparently precipitated by a mucous membrane trauma have occurred in an individual subject to periodic leukopenia and happening to be in such a period at the time of the exciting incident.

In other words, angina may occur spontaneously or following mucous membrane trauma during any period of leukopenia. There is nothing, however, about such a leukopenic angina to suggest the cause of the leukopenia. In some instances a recognized cause of leukopenia is lacking and we are forced to employ some such term as idiopathic leukopenia; some of these exhibit a cyclical or periodic tendency. Leukopenia of this type when accompanied by angina and systemic reactions forms the syndrome entitled agranulocytic angina.

Such a concept finds a startling analogy in purpura hemorrhagica. Here also is a failure of one function of the bone marrow—sometimes the platelet forming function, secondary to a clearly recognized cause, sometimes forming one part of the triad of aplastic anemia, but in still other instances continuing throughout a patient's life with, however, only intermittent purpura. The further one carries this analogy the more parallel the evidence seems to be.

We lack altogether any knowledge of the cause which produces recurrent agranulocytosis. What is the unknown factor, the x, in these patients which renders them liable to spontaneous agranulocytic angina, which makes it dangerous for them to have a dental extraction, and which perhaps makes them more likely to develop dangerous leukopenia after such an incident as an injection of arsphenamin?

Studying the cases I have seen for some common factor which might be the unknown x of our problem, I have been struck by the presence of allergy in each. This may, of course, be a mere coincidence, but this is unlikely for allergy occurs in only 10 per cent of the race. I fully realize that we are in a period when it is the fashion to explain everything upon an allergic basis; diges-

tive troubles, migraine, epilepsy, and many others have recently been added to the list of allergic conditions. And yet I am sufficiently impressed by the evidence to suggest that agranulocytic angina may have allergy as the background—not of the angina directly, but of the leukopenia which permits the angina. The hypothesis which forms in my mind would relate the recurrence of leukopenia to that seen upon the entrance of a foreign protein into the body.

That there is a rhythm of the total white cell count has been known for years; Türk believed the daily low point came early in the morning with a drop to about 5000 due to a reduced number of neutrophils. Sabin¹⁵ and her colleagues found that the daily variation of the white count was such that the highest count was usually twice the lowest.

In recurrent leukopenia we have a periodic or occasional excessive lowering of the leukocytes under some influence which might conceivably be allergic. The literature contains no supporting evidence for this hypothesis. Kopelowitz¹⁶ does suggest that there must be a factor, some idiosyncrasy or allergy, or possibly endocrine factor that renders the hematopoietic system susceptible to a noxious agent. He does not report any evidence to support his view.

The first case in which the presence of allergy was brought to my attention was one which will be reported by Dr. Mackinnon Ellis. The allergic state came out clearly in her history, but only after our interest was attracted by a violent urticaria which followed upon a transfusion from a donor who had recently eaten of a food to which the patient was sensitive. It is further interesting that the white count, which had been rising, fell back sharply to a very low figure following this reaction.

Another patient has hay fever and migraine which has been attributed to food allergy. Another was proved food sensitive.

Dr. Joseph M. Hayman, Jr., of the Lakeside Hospital, Cleveland, knowing of my interest in this hypothesis, has sent me a most interesting record of a woman who had entered the hospital on several occasions because of severe asthma. She was sensitive to a number of foods and always had an eosinophilia. She underwent an attack of fever, red spongy gums, and severe leukopenia. Urticaria followed transfusion in her case also. Eosinophilia was present in Thayer's case.

This evidence is, of course, far from sufficient for any dogmatic claims, but it is certainly suggestive and the hypothesis seems tenable. We know of a leukopenia from foreign protein, we know of other allergic manifestations which at times are periodic and recurrent. The best we can do at present is to watch for further evidence.

TREATMENT

Treatment of the Angina.—The treatment of agranulocytic angina has varied somewhat, according to the views held concerning the nature of the condition. The earlier reports all record efforts directed at lessening the infection both

locally in the ulcerations, and systemically when a blood stream infection was present or suspected. Arsphenamin has been very widely administered without any apparent beneficial result. It is certainly unwise to employ an agent which is in itself a cause of leukopenia. The use of arsphenamin has arisen from a belief that the Vincent's organisms found in anginal lesions were important and required treatment.

Undoubtedly the local lesions require attention, but I doubt if it matters so much what measures are used so long as sloughs are cleaned away and the parts cleansed at frequent intervals. Perhaps the local use of arsphenamin is justifiable, and Babbitt¹⁷ is enthusiastic over the results with 25 per cent trichloroacetic acid and 10 per cent neoarsphenamin in glycerin.

Treatment of the Leukopenia.—Where the cause of a leukopenia is known it must be removed if possible and repeated transfusions employed to tide over the interval until the patient's bone marrow is given a chance to reassume its function. Where the cause is not known, as in agranulocytic angina, transfusion seems to offer the best hope. It may be argued that the number of leukocytes supplied is too small to be very helpful. It is true that mathematically the effect on the total count of the patient is not striking. A transfusion of 500 cubic centimeters of blood with 8000 white cells per cubic millimeter only contains 400,000,000 leukocytes which are rapidly distributed and perhaps destroyed throughout the host's circulation and tissues. In one very severe attack not a single granular leukocyte was seen in spite of transfusions sufficient to supply 2000 per cubic millimeter of the patient's blood. Nevertheless such transfusions can be repeated, if necessary, daily, and I believe do accomplish good. They should be large transfusions, given daily, from donors who have been carefully typed and also who have fasted for a number of hours. Plethora, unless extreme, is no contraindication; when plethora is marked, venesection may precede the transfusion.

No satisfactory method of transfusing leukocytes alone has come to my attention, nor any beneficial results from any leukocytic extract.

Even if the leukocytes of a transfusion are destroyed, it is possible that the products from their death form the normal and perhaps most potent stimulus to the bone marrow for the production of new cells. In the final analysis it is a resumption of leukocyte formation which must occur if the patient is to recover. If transfusions should help to bring this about, even indirectly, they would be more valuable than supplying a few cells to function during the necessarily short period.

An argument used against transfusion in anemia is sometimes applied here, that by supplying the lacking elements the bone marrow loses some of the keen stimulus to resume its activity. A good example of this point of view is offered by Minot's treating a case of agranulocytic angina by free bleeding, hoping thus to stimulate the bone marrow. The patient recovered. Our pa-

tient who did so well after tonsillectomy had quite a severe hemorrhage a few hours after returning to the ward; possibly it was the hemorrhage rather than the removal of the tonsils which raised her leukocyte count.

The various liver extracts seem useless, and no chemical has any specific effect. On the theory that while heavy exposures of x-ray depress the bone marrow, small doses are stimulating, Friedemann reported using minimal radiation of the long bones with miraculously prompt benefit. A later report by Friedemann and Elkeles¹⁸ does not sound so optimistic, nor has the treatment been favorably reported upon by others, although tried in many cases. Of the four patients on whom I have seen it tried, none experienced the prompt feeling of well-being nor did young granular cells appear in the blood, as it has been claimed.

We must learn the underlying cause of the leukopenia which is the basis of so-called agranulocytic angina, in order that treatment may be directed not only at the local ulcerations, at the need of circulating leukocytes and at the dormant marrow, but also at this underlying cause whether it prove to be allergy or some still unsuspected factor.

550 Maloney Pavilion, University of Pennsylvania Hospital.

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THE MENTAL HYGIENE SURVEY OF CALIFORNIA*

PART I

By FREDERICK H. ALLEN, M. D.

Philadelphia

AND

GLENN MYERS, M. D.

Los Angeles

LONG ago mental disorders were regarded with the same misunderstanding that gave rise to myths. Eventually came the recognition of the major psychotic disorders as medical problems. Until the twentieth century, however, medical principles were applied almost solely to the more apparent adult psychotic and psychoneurotic disorders. Then came the knowledge that these disorders are the outgrowth of conditions existent in the childhood of the subjects and might have been prevented had proper approach been made. Preventive mental endeavor so became concentrated in the child rather than in the adult. Now

it is further recognized that mental hygiene work cannot be complete without combined work with the child, the persons with whom the child comes into contact and the other environmental factors. Treatment of the child (or of the adult) cannot be detached from a total situation involving home, parents, brothers and sisters, school, neighborhood and companions. Psychotherapy must be applied to persons and psychiatric social therapy to situations.

MENTAL HYGIENE PROBLEMS CONFRONT ALL PHYSICIANS

Every practitioner of medicine, no matter what his specialty, is confronted with a great number of mental hygiene problems. His ability to meet such problems depends upon his understanding of them through education and practical experience. His education usually has been wholly inadequate ("only seventeen of the sixty-four four-year medical schools in the United States require of their students as much as one hundred hours of psychiatric study"¹) and he is prone to develop erroneous concepts through unguided experience. Understanding of the psychotic or psychoneurotic adult cannot be complete without understanding of the child and the situational influences that tend to the development of deviations from the normal personality. Such understanding is to be had only through special work with children such as, for example, has been developed in child-guidance clinics with the characteristic personnel set-up centered around psychiatrist, psychologist, and psychiatric social worker. Professional education is thus of utmost importance, in order that the medical practitioner not only shall treat his patients wisely but that he shall disseminate practical information and advice to the public personally or through writing. Similar education is needed by public health officers, nurses, social workers, teachers, administrators, recreation directors, policemen, probation officers, judges and practicing lawyers. Constructive education is the backbone of the mental hygiene approach.

UNITED STATES STATISTICS ON HOSPITALS FOR THE MENTALLY ILL

Mental health has been defined as "the adjustment of individuals to themselves and to the world at large with a maximum of effectiveness, satisfactions, cheerfulness and socially considerate behavior, and the ability to face and accept the realities of life."² Obviously the field of mental hygiene is a vast one. In federal, state, county, city, and other hospitals for nervous and mental patients in the United States, there was in the year 1930 an average daily census of 415,042 patients, representing a net increase over the year 1929 of 19,635. In total capacity, the 561 nervous and mental hospitals exceeded the 4302 general hospitals by 66,310 beds.¹ It has been found that there are, in mental hospitals, 250 patients over fifteen years of age for every 100,000 of the general population; 80 (per 100,000 population) are admitted each year, 70 of these for the first time. It has been estimated that "the

* Read before the Neuropsychiatry Section of the California Medical Association at the sixtieth annual session at San Francisco, April 27-30, 1931.

Editor's Note.—See, also, a preliminary report on the California State Mental Hygiene Survey in December 1930 California and Western Medicine, page 872.

chances of persons, living in states with good facilities, being committed to hospitals for the mentally ill in the course of their lifetimes, are about one in twenty. The chances of developing a psychosis or a severely incapacitating neurosis (whether the patient is sent to hospital or not) are about one in ten."² In addition, there are habit problems, socially objectionable behavior and personality problems preventing the individual from achieving healthy personality organization that will permit him to be satisfied and satisfying in social relationships. Allied to such problems are delinquency, crime, poverty and dependency, with their enormous costs.

THE 1930 MENTAL HYGIENE SURVEY OF CALIFORNIA

In the summer of 1930, a mental hygiene survey of the State of California was made under the direction of Frederick H. Allen, M.D. A preliminary report of the survey has been published³ but the completed report is not yet in print. With the permission of Doctor Allen and with due credit to him for material used, as much of his findings and recommendations follow as is possible to include in a paper of this length. It is regretted that only brief abstracts of the voluminous report can be here presented. It should be mentioned that criticism, where it appears, is meant to be constructive in character and applied to conditions generally recognized and understood by the personnel of the state institutions who have, in most instances, made the effort to bring about betterment of the conditions criticized.

CALIFORNIA FACILITIES FOR STUDY, CARE, AND TREATMENT OF THE MENTALLY SICK

In 1930, there were approximately 18,000 mental patients in the state, private and other hospitals of California. The way that they are supervised, cared for and treated is a mental hygiene problem of great importance. The nature of mental conditions frequently requires that hospital care shall be enforced through legal procedure. The procedure of commitment should be such as to minimize the legal compulsory aspect and to emphasize the medical treatment of the patient as the major consideration.

Present Commitment Law in California.—The present commitment law in California is based upon the assumption that a person with mental disorder, to be commitable, must be dangerous to himself and to the property and life of others. This concept was formulated when the law was passed in 1864 and this part of the law has never been changed. The medical aspect of commitment which emphasizes hospitalization as treatment, is given little consideration. Commitment is mainly a legal procedure to provide custody for the patient and safety for the community. A complaint of insanity is made and a warrant is issued by a magistrate. The sheriff takes the patient into custody and detains him in a "suitable place." Each county has used its own judgment

concerning the type of quarters to be regarded as suitable, with the result that all kinds of conditions exist, varying from good hospital care to the very worst of jail conditions. In some counties there is overlapping of such facilities. In 1929, 890 insanity warrants were issued in thirty counties that still use county jails for detention of mental patients, and a large proportion of these patients were held in jail pending legal disposition. In 1929, 1646 mental patients were disposed of in seventeen counties that have transferred the jail quarters to the county hospitals. Thus forty-seven of the fifty-eight California counties provided either jails or jail-like facilities for the detention of mental patients pending further disposition. In 1929, eleven counties with 3865 insanity complaints appear to have approached this problem from a medical point of view. Six of them not only provided good hospital facilities, but also facilities for examination and temporary treatment. All patients, nevertheless, were arraigned before a superior court judge who set the time for the trial, telling the patient that he has the right to have counsel and to produce witnesses. The law provides that the hearing shall be held in "open court" and the patient must be present if physically able. The complaining witnesses must state before him the reasons for regarding him to be "insane." Two physicians must be present to hear the evidence and to examine the patient. Examination is usually made just preceding the hearing or at the time of the hearing. Only four counties have their own staff of visiting psychiatrists who examine all patients independently of the court. In many counties, including some of the larger cities, the best that can be said of the examination is that it gives the proceeding a slight medical coloring. If commitment is decided upon, the patient is turned back to the sheriff for transportation to the hospital. It is still a common procedure to handcuff patients while they are en route to the state hospital. Of the last fifty admissions to one state hospital, it was found that 46 per cent came to the hospital under some form of physical restraint. Steel cuffs and leather belts were used in most cases. Practically all of these patients quickly settled into the routine of the hospital. It is thus clear that restraint is essential only when the care is unintelligent. The unwise procedure previous to hospitalization too frequently creates excitement and makes restraint necessary. The law makes illegal the commitment of a patient from his own home, although many counties practice this procedure. It makes no provision for temporary commitment. It provides for jury trials on demand by a patient and in those criminal cases in which the plea is brought "not guilty by reason of insanity." The procedure provides influences detrimental to the patient's best interests and detrimental to the recovery of his normal mental condition. It helps to maintain an archaic, erroneous and unscientific attitude concerning the nature of mental disease and prevents the building up of a better conception of mental illness. The law was originally designed to prevent unwise hospitalization, but

better safeguards are in use. State hospital staffs are adequately able to determine what patients do not need to be in mental hospitals and authority is vested in the superintendents to return such persons to the community at once. The medical profession can be trusted to exercise this function with discretion. There must be some legal formality to the commitment procedure, inasmuch as the patient is deprived of his liberty, property rights are involved and detention by force is sometimes indicated. Other states have been able to make these legal formalities of commitment extremely simple. In the present commitment procedure the judge can, if he chooses, reject the opinions of the examining physicians and he has been known to do so. The function of the judge in a commitment procedure should consist in no more than the mere formality necessary from the legal standpoint, including the legal protection of the physicians signing the commitment orders.

Suggested Changes for a New California Commitment Law.—The following changes are suggested for a new commitment law:

1. To permit a relative to make application for mental examination of a person thought to be mentally ill. This application should be signed by the local health officer, who should be responsible to see that examination is made.

2. To have examination made by two qualified physicians, either at the patient's home or at a suitable place provided by the county. If detention is necessary, it should be in or connected with a hospital and not in jail. Every man or woman licensed to practice medicine in California, who has practiced for five years, should be qualified to sign commitment papers.

3. Papers to be presented to a magistrate or superior court judge, to be sworn to and recorded. The patient should not be required to appear before a judge or in court unless he demands it.

4. Immediate transportation from the patient's own home to a mental hospital to be made possible. A corps of trained attendants from the state hospitals and paid by the state should be responsible for this duty.

5. Provision to be made by the state for the establishment of receiving hospitals at various convenient points to allow for reception and examination of patients from the smaller counties.

6. Temporary commitment to any approved psychopathic ward to be made possible. Such commitment should be authorized on the certificate of one qualified physician, to run for a period of ten days. This would simplify the machinery of getting immediate hospital care in the case of urgency.

7. Every patient to have the right to demand a court hearing before a board of experts appointed by the court.

8. In the case of the relatively small percentage of dangerous and violent patients pending hospitalization, it should be possible to have the assistance of local peace officers.

9. Commitment to be made possible to a few specially licensed private hospitals.

Present Psychopathic Parol Act.—In 1927, the attempt was made to introduce more elasticity into the commitment procedure by the passage of the Psychopathic Parole Act. This provides for the examination of persons mentally sick and bordering upon insanity, but not dangerously insane. Such persons are placed in charge of the psychopathic parole officer and are allowed to remain at home, or the court can direct that they be placed in suitable homes or sanatoria subject to the supervision of the psychopathic parole officer. This Act seems to emphasize the legal fallacy about insanity. It attempts to restate the legal attitude that a mental patient, to be committable, must be dangerous. If he is not dangerous, then he is not legally insane and must be called mentally sick. It is a curious attempt on the part of the law to bring the provisions more in keeping with the medical attitude toward mental patients. It has, however, allowed the courts in two counties to keep certain patients under observation without commitment to a state hospital. As long as the law allows commitment only to the state institutions, this additional provision has helped. If the present provisions of the Psychopathic Parole Act are continued, this work should be in charge of persons who have definite qualifications which should be written into the Act and the work should be under good medical supervision.

Hospital Care of Mental Patients in California. Only one private general hospital in the state makes any provision for the treatment of mental patients. Some 627 patients were cared for in the last fiscal year. All were maintained on a voluntary basis. They were carefully studied by the psychiatric staff, assisted by the senior students of a medical school. The ward is used essentially for teaching purposes and the histories obtained are quite complete. It is in charge of a graduate nurse, and pupil nurses rotate through the service. This ward demonstrates the feasibility and necessity of having a ward for mental patients as a regular part of a general hospital. It is enabling a medical school to teach the subject of psychiatry adequately. There is a marked scarcity of general hospital facilities for mental patients in California. More large general hospitals should equip a ward for such patients and should attach a psychiatrist to their staff. The treatment facilities of a hospital cannot be regarded as complete until this gap is filled.

Four county hospitals do something more than keep mental patients pending commitment. Only one county hospital has developed a psychopathic department which has no relation to the commitment procedure. Most of the patients are admitted on a voluntary basis and are kept for twelve days. Diagnosis rather than treatment is emphasized as the major function.

Better facilities in counties are needed for the care of those aged persons who require only good

custodial care. Such facilities should be developed at county farms and should be used only for such persons and not for those patients in need of treatment. Smaller counties should join together on this project.

The state hospitals for the mentally sick are charged with the medical and social responsibility for a large number of sick persons, both while they are patients in the hospitals and while they are readjusting to the normal life in the community. The work of these hospitals forms an important chapter in the mental hygiene program of any state. California's first state hospital was established in 1860 and, continuously since then, the state has not deviated from the policy of complete state care, although one large county under the operation of the Psychopathic Parole Act has cared for large numbers of patients without commitment. California has six hospitals devoted entirely to the care of mentally sick patients. On June 30, 1930, they were caring for 14,906 patients; and 1293 were on parole or otherwise absent. This gives a ratio of 261 state hospital patients to 100,000 general population. During 1929, 5752 insanity complaints were issued and 4540 patients were admitted to these hospitals—a ratio of 83 patients to 100,000 general population. In the last fifteen years, California has almost doubled in general population, but the number of patients in state hospitals has not grown proportionately. The drop in ratio does not mean that mental disease is decreasing; it probably means that a building program has not been maintained to meet the needs of a rapidly growing state.

RECOMMENDATIONS PROPOSED TO INCREASE EFFICIENCY OF STATE HOSPITALS

A few of the recommendations follow, meant to better equip the state hospitals for their important clinical responsibilities: Expansion of capacity to 19,000 beds within five years, with replacement of antiquated buildings unsuitable for the care of sick persons; financial support to provide a per capita allowance of at least one dollar a day (now about sixty-nine cents a day); conversion of two state hospitals, proximate respectively to Los Angeles and San Francisco, into acute psychopathic hospitals; better record work through larger medical staff, more use of trained social workers, more stenographic assistance and statistical service from the Department of Institutions. Each hospital should have: a reception service to maintain continuous treatment of approximately 10 per cent of the total hospital population; a well trained clinical director, with full time for clinical activities; at least one physician to 200 patients (now 1 to 304); a trained pathologist; at least one full-time dentist to every 1500 patients; a chief physiotherapist with four to six assistants; the application of a well-planned occupational therapy program to every patient capable of being benefited by activity; a recreational director; a trained psychiatric nurse with graduate standing in charge of nursing and at-

tendant personnel and responsible for their assignments; one attendant to every nine patients (now 1 to 11.3).[†] Increase in salaries is indicated all down the line.

"CRIMINAL INSANE" AND DRUG PATIENTS

The term "criminal insane" has little validity, as the study indicates that a large proportion of these patients showed evidence of mental disturbance before the criminal act was committed. Better psychiatric facilities in community and court would effect the commitment to hospital of more of these patients before the commission of a criminal act. Custodial facilities in one of the state hospitals will be expanded to care for 300 of these patients, according to present building plans. These additional quarters should permit transfer of custodial patients from the other hospitals and should entirely relieve San Quentin prison of those mental patients now being kept in the so-called "crazy alley." This is the top gallery of one of the cell blocks, which has been set aside for the housing of this group. These men do no work, but are kept away from contact with the rest of the prison population and spend a large part of their time in their cells. These psychotic patients are only the more obvious ones. Mixed in with the 7000 men in San Quentin and Folsom prisons are large numbers—no one knows how many—who are definitely insane.

The drug colony needs a great deal more equipment both for treatment and for occupational therapy. This hospital should have an adequate social service staff both for assistance in obtaining histories and for supervision of patients on parole.

(To be continued)

PARALYSIS—FROM SPURIOUS JAMAICA GINGER EXTRACT*

REPORT ON LOS ANGELES COUNTY OUTBREAK

By FRANK G. CRANDALL, M. D.
Whittier, California

BEFORE January 15, 1931, the disease or condition known as "jake paralysis" was unknown in California except for the reports of an outbreak of Jamaica ginger paralysis which occurred last year in the middle western and southern states. Therefore, nothing of the character of "jake paralysis" was suspected by a physician in Whittier when, on January 18, a man aged sixty, with symptoms of nausea and vomiting, abdominal cramps and a severe diarrhea, was visited.

REPORT OF CASE

The patient was sent into the local hospital. Laboratory tests for amebic and bacillary dysentery were

[†] The budget passed by the 1931 legislature provides for the biennium, a ratio of one attendant to ten patients.

* From the health department of the county of Los Angeles.

* For other comment on "jake paralysis," see California and Western Medicine, November 1930, page 823, and May 1931, page 378.

negative. Blood count was normal. Blood Wassermann was negative. Temperature was normal. In three days the patient had recovered sufficiently to return home. His gastro-intestinal symptoms had all cleared up, but in about ten days he began to develop soreness in the muscles of the calves of his legs and stiffness and numbness in his toe. This was rapidly followed by difficulty in walking and bilateral foot drop. Upon attempting to walk, the patient was forced to hold on to some object for support and had a characteristic flail foot gait.

His physician reported the case to the writer as a suspected poliomyelitis. After a careful examination and consultation with Dr. George H. Roth of the health department of the county of Los Angeles, a diagnosis of "jake paralysis" was made.

This patient, within a few days, became unable to use his fingers, especially the thumb and forefinger. Later, he developed a bilateral wrist drop and the fingers were drawn up from the loss of function of the extensor group of muscles. He was sent to the Los Angeles County General Hospital and has been confined to his bed since that time. He is not able to walk or stand up or even dress or feed himself.

COMMENT

To the writer's knowledge, this was the first case of "jake paralysis" diagnosed and recognized in the recent Los Angeles outbreak. An interesting point in this case was that at first this "jake" victim denied that he had used any alcoholic beverage, but after continued questioning, admitted that he had drunk the contents of two bottles containing two ounces each of Jamaica ginger on January 18. He claimed he did not know the source of his supply and he had destroyed the bottles. The writer noticed a new 1931 calendar on the wall of the room, put out by a local drug store and accused the man of buying it there. He confessed that he had been buying it from this store for years. As a result of this information, the writer, assisted by Mr. Frank Foreman of the county health department, located twelve other "jake" victims in Whittier the next day—nine men and three women—and a week later two more men, making a total of fifteen patients from the city of Whittier. The druggist from whom they had all purchased their supply had destroyed the remainder of his stock so that no samples were available for analysis. However, enough was found in the bottles in the homes of some of the victims to show that it was below the standard of the United States Pharmacopeia, although the presence of the adulterant, tri-ortho-cresyl-phosphate, could not be demonstrated.

The case described above is a typical "jake paralysis" of the severe type. The writer has seen and studied about seventy-five cases during our outbreak and practically all of them showed the same symptoms with the exception that some did not develop the acute gastro-intestinal upset as in this patient and some of them were not so badly paralyzed. The milder cases were in patients who showed a slight improvement insofar as their hands were concerned, and some of the victims seemed to think their feet have improved. But, from our observation, the paralysis is permanent and what really occurs is that the individual learns

to use, and develops, other muscles to take the place of those paralyzed, the paralysis being due to the degeneration of the nerves supplying the muscles. The patient thinks because he can use his hands and feet better, as time goes on, that he is gradually recovering.

By order of Dr. J. L. Pomeroy, Los Angeles County Health Officer, a thorough investigation was made of these cases and it was found that all of them could be traced to one source, namely a brand labelled "Superior Brand" fluid extract of ginger, United States Pharmacopeia, which had been bottled, labeled and distributed throughout this territory by the California Extract Company, located at 443 South San Pedro Street, Los Angeles, and which was owned and operated by Jacob Rosenbloom, his wife and two sons. Later investigation showed that all the cases at the National Soldiers' Home in Sawtelle, thirty-five in number, as well as all the cases occurring in Los Angeles City, could be traced to this brand, and one other, known as "Superb," which came from the same original source, namely, a firm by the name of Jordan Brothers, New York City. Rosenbloom purchased his supply from this firm in barrel lots and bottled and labeled it in his Los Angeles plant and distributed it in two-ounce bottles in gross lots to the retail drug stores.

UNITED STATES PUBLIC HEALTH SERVICE INVESTIGATIONS

We were very fortunate in having Dr. Maurice I. Smith, Senior Pharmacologist of the United States Public Health Service from Washington, D. C., visit our department the last week in February. Doctor Smith, in 1930, discovered the cause of "jake paralysis" and has carried on an extensive investigation along this line which has been reported in the *United States Public Health Reports*. With the writer, Doctor Smith visited a large number of the "jake paralysis" victims and confirmed the diagnosis. The county laboratory was turned over to Doctor Smith while he was here, and chemical and pharmacological tests were made on samples of fluid extract of Jamaica ginger which showed the presence of tri-ortho-cresyl-phosphate in some of the samples.

OFFICIAL ACTION TAKEN IN LOS ANGELES COUNTY

Immediately following our investigation in Whittier, every drug store within the county health department's jurisdiction was visited and a check up made as to their supply of Jamaica ginger. All "Superior Brand" ginger was quarantined. Only one drug store was found in the city of Whittier selling this brand. That druggist had sold forty bottles of a shipment of one gross which he received on January 17. The contents of forty bottles of this stock supplied fifteen paralysis patients.

The writer filed complaints, under the California State Pure Drugs Law, against E. J. Lewis, proprietor of the Greenleaf Pharmacy in Whittier, for selling mislabeled and misbranded drugs.

He pleaded guilty in Justice Court in Whittier on March 4, 1931, and was fined \$150. Another druggist, H. A. Ball of Santa Fe Springs, pleaded guilty and was fined \$25, as no known cases of paralysis developed from the sales he made.

Jacob Rosenbloom was taken into Municipal Court by the writer, and with the coöperation of the Los Angeles City Prosecutor's Office, was found guilty by a jury of eleven women and one man and sentenced by Judge Ellis A. Eagan on May 16 to one hundred and eighty days in jail and \$500 fine, which is the maximum penalty under the law. About fifteen other charges are pending against him in addition to the Federal charge of conspiracy to evade the National Prohibition Act. Up to the date of this paper, May 21, 1931, the only prosecutions which have been made in this state against those selling adulterated fluid extract of ginger, have been made by the Los Angeles County Health Department and convictions have been secured in each case.

Dr. J. L. Pomeroy, with the coöperation of the district attorney's office and State Senator McKinley, succeeded in having this year's state legislature pass a bill requiring a physician's prescription to obtain fluid extract of ginger from a drug store. So far as is known, this is the first and only legislation which has been passed by any state to protect its citizens against "jake paralysis."

The recent outbreak of "jake paralysis" may be said to be an end result of so-called prohibition. Almost all of these cases give a history of having used liquor for many years. When the Volstead Act became a law and they were deprived of their usual toddy or daily drink of whisky, they could not afford to pay bootleggers' prices or buy prescription whisky, so they bought their fluid extract of jamaica ginger for fifty cents a bottle. It was the poor man's way of getting a drink of liquor. As one of these victims told the writer, he was afraid of bootleg liquor but thought it would be safe to buy fluid extract of jamaica ginger, containing 85 per cent alcohol and with the United States Pharmacopeia stamp on the label, from the druggist from whom he had bought drugs for many years. Little did he realize that the bootleggers had taken advantage of the demand for this old household remedy as an alcoholic beverage, and had adulterated it and poisoned it with a ginger substitute, tri-ortho-cresylphosphate, in order to make greater money profits. One woman victim had purchased the jamaica ginger extract for stomach cramps and is paralyzed as a result!

Los Angeles County will now have as county charges most of these two hundred "jake" victims for the rest of their lives because they couldn't get along without some form of alcoholic stimulant, even if we do have the Eighteenth Amendment. It needs no great stretch of the imagination to calculate the outlay of the thousands and thousands of dollars which in the course of years the taxpayers will thus be called upon to pay in the care of these now public dependents.

Whittier Health District.

POSTURAL TENSIONS FOR NORMAL AND ABNORMAL HUMAN BEHAVIOR—THEIR SIGNIFICANCE*

PART I

By E. J. KEMPF, M. D.
New York, N. Y.

DISCUSSION by H. G. Mehrrens, M. D., San Francisco;
Walter F. Schaller, M. D., San Francisco.

THE significance of postural tensions of unstriped and striped neuromuscular reflexes for human behavior is too wide a subject to be covered amply in a single paper.

SCOPE OF THIS PAPER

It is necessary to limit this presentation to the more outstanding functions, applying them to normal and abnormal behavior.

First, we need to abandon the old sterile ways of approaching the riddle of human behavior. We avoid the dilemmas which follow from assuming a psychophysical parallelism; we do not accept the condensed hypothesis of the neurologists who claim that the brain is the organ of the mind; neither do we use the ancient academic theory that there is a mind functioning in reciprocal coöperation with the body. None of these hypotheses gives the medical sciences a way of correlating man's mentation, emotion, and physiology, so that the physician can intelligently treat his cases wherein an organic or functional pathology makes for abnormal behavior, or abnormal behavior produces functional or organic pathology.

Moreover, we do not care to reduce such functional attributes of the personality as the ego or mentation to physiochemical processes within the nerve cell, for such a process would be like trying to explain literature in terms of letters of the alphabet.

We cannot use Freud's theory of a libido principle because it assumes that the libido principle becomes mysteriously converted into

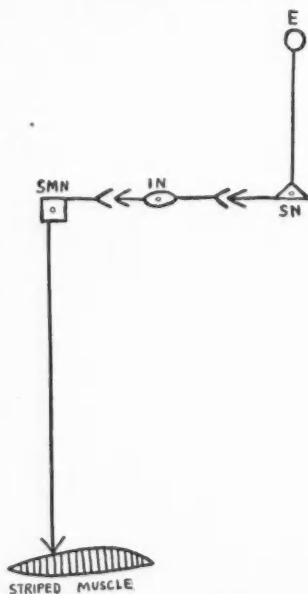


Diagram 1.—Old concept of stimulus and response of motor nerve and muscle without concept of muscle tonus. E, exteroceptor; SN, sensory neurone; IN, intercalated neurone; SMN, somatic motor neurone.

*Read before the Neuropsychiatry Section of the California Medical Association at the fifty-ninth annual session at Del Monte, April 28 to May 1, 1936.

physical symptoms. It skips over the biological riddle created by a libidorganic version of the ancient mind-body interaction theory.

The biologic evolution of man from lower animal forms to the present level requires that we develop a biologic comprehension which is capable of explaining all of man's personal attributes. We use a new conception of the sensorimotor reflex circuit with which we may explain the principle of postural tensions of the striped and unstriped muscular systems which underlie normal and abnormal behavior.

The old concept of a reflex arc, which seems to have been theoretically developed on the idea of stimulus and response, without adequate physiological data, has proven wholly useless for building up an understanding of human behavior which has any clinical value.

COMMENT ON DIAGRAMS

In the Diagram 1, illustrating the old concept of stimulus and response, we see human behavior amounting to little more than a living organism reacting like a typewriter to an endless stream of environmental stimuli.

Diagram 2 illustrates in a simplified form the principle of the new concept of a reflex sensorimotor circuit, in which the muscle cell is shown in continuous tonus with its motor nerve cell, so that motor impulses to the muscle cell from the motor nerves not only stimulate its contractions, but also its postural tonus; and the proprioceptive stimuli originating from the working muscle cell finally restimulate its own motor nerve through its proprioceptive sensory nerve, thereby completing a circuit.

(The concept of a constantly repeating efferent-afferent neuromuscular reflex circle maintaining postural tonus, which may be stimulated by an exteroceptive afferent impulse into an overt movement, was derived from Sherrington's work on Postural Tonus of Muscle and Nerve, Brain, Vol. 38, Part 3, 1915. The value of the concept of the proprioceptive component and postural tonus of the neuromuscular reflex circuit for explaining many fundamental problems in behavior, which were otherwise inexplicable, was emphasized in my Autonomic Functions and the Personality, 1918. Since this publication, I have found that Bok, in 1917, referred to by Holt in Animal Drive and the Learning Process, Vol. I,

1930, also gave early emphasis to the importance of using the concept of reflex circles instead of the old concept of reflex arc.)

Diagram 3 illustrates the relationship between unstriped, autonomic sensorimotor reflex circuits and striped, so-called voluntary, sensorimotor reflex circuits. This diagram is also used to illustrate the intimate reciprocal relationship which we know must exist between the two muscular systems, from abundant anatomic, physiologic, clinical pathologic, psychologic and psychopathologic observations.

Diagram 3 illustrates the postural tonus of the autonomic unstriped muscle cells which include all of the muscular viscera, the heart, and the arterial and capillary vessels, and which through vasomotor influences determine largely the activity of the glands of external and internal secretion. It illustrates the intimate reciprocal influence of the tonus of the autonomic system upon

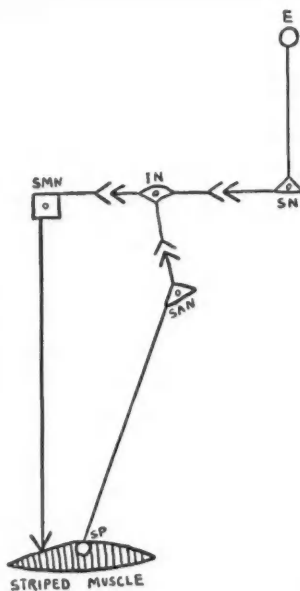


Diagram 2.—New concept of stimulus and sensorimotor circuit in continuous but variable tonus responding as a group. E, exteroceptor; SN, sensory neurone; IN, intercalated neurone; SMN, somatic motor neurone; SP, somatic proprioceptor; SAN, somatic afferent neurone.

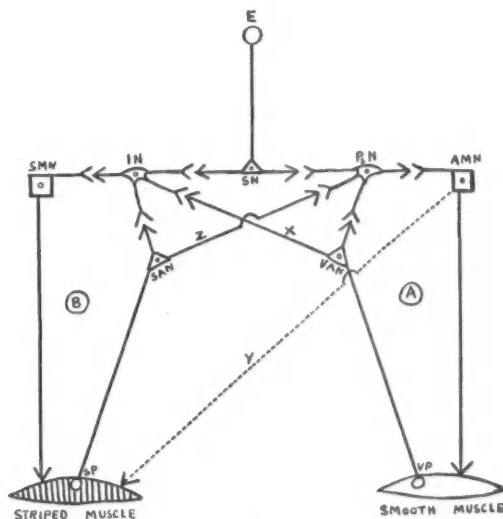


Diagram 3.—New concept diagrammatically presented to show the influence of the tonus of the unstriped sensorimotor reflex circuit (A) upon the tonus of the striped muscle circuit (B). E, exteroceptor; SN, sensory neurone; IN, intercalated neurone; SMN, somatic motor neurone; SP, somatic proprioceptor; SAN, somatic afferent neurone; PgN, preganglionic neurone; AMN, autonomic motor neurone; VP, visceral proprioceptor; VAN, visceral afferent neurone.

The postural tonus of the unstriped reflex circuit (A) influences the postural tonus of the striped muscle reflex circuit (B), through X and probably Y. Reciprocally B has some influence upon A through Z. The influence of the external stimulus at E is qualified by the kinesthetic stream from the muscle set of A and B. The reactions of A are a resultant of its own state of tonus plus the stimuli from E plus the stimuli from B. Thus, a man, in the face of a dangerous situation at E, by keeping up a resistive attitude, may prevent himself from becoming too frightened by the situation to meet it safely. (No attempt is made in this diagram to show association paths and higher central connections which have their final organization through the paleocephalon.)

(The actual mechanism by which the autonomic nervous system influences the tonus of striped muscle is still physiologically and anatomically unsettled. It seems to be generally accepted at present that the autonomic efferent component represented by line Y in Diagram 3 goes to the striped muscle field, but it is questioned as to whether the nerves end in the striped muscle cells or in the unstriped muscle cells of the finer arterioles—somehow to have an influence upon the nutrition and tonus of the striped muscle cell. These incompletely understood factors, while important for physiology, are not deterrents from using the valuable concept of the interrelation of autonomic neuromuscular tonus with cerebrospinal neuromuscular tonus as a basic factor in human and other animal behavior.)

the striped muscular system, and shows how the striped muscle system may influence the autonomic system.

It is at once apparent to anyone having medical knowledge that the functioning of the nerve and muscle cells of the dual reflex circuits in everyday life must be greatly affected by their nutritional or physiochemical states as well as their organic constitution. Hence metabolism, endocrine secretions, any form of intoxication (infectious disease, exhaustion or chemical), must affect the integrity and strength and weakness of their functioning.

This conception of the sensorimotor reflex circuit, we wish to show, contains all the factors necessary to bring the various branches of the medical sciences into a coöperative working relationship with psychopathology and psychology.

We will now try to apply the functional implications of this concept to those aspects of human behavior which are particularly important to the physician, surgeon, and psychopathologist.

POSTURAL TENSION IN RELATION TO MOVEMENT

Postural tonus, as it is used here, does not mean the position which the organ or limb may assume through the contraction or relaxation of the muscles, but it means the quality of firmness or laxity of the tone of the hollow muscular viscera as they hold their contents, or of the skeletal muscles as they hold the skeletal frame against the pull of gravity. This tonus makes the basis for muscular contraction and relaxation, but is not the act of overt movement itself. To illustrate: When we are in good confident spirits we find we move easily, firmly, with little fatigue. When we are discouraged and sad we make the same movements with very different muscle tonus, and this shows in our drooping posture. We are not concerned here about sadness making the drooping tonus or the drooping tonus making sadness or what nutritional, endocrine, environmental factors make either sadness or drooping tonus. We are now concerned with the fact that the muscle tonus, whatever it is and whatever mood is involved with it or however it comes, makes the basis for movement and determines its quality for effectiveness. This tonus also influences our reactions to stimuli, hence influences externally and internally aroused sensation. When the surgeon holds his needle to sew delicate tissues, his capacity for making skillful movements depends upon the autonomic-affective tonus of his grip on the instrument. If too tense or too soft, the skill of movement and touch will be impaired. This basic quality applies to every skillful thing we try to do in life.

The tonus of the neuromuscular circuit may vary from pathologic hypertension to a pathologic hypotension, such as we find in spastic and flaccid conditions of the muscular viscera. Between these extremes there is a range of tonus which is best suited for man's vast varieties of skillful, powerful movement, without discomfort. Too much tension makes movement painful and

difficult; too little tension makes our movement weak and difficult. Both extremes are ineffective and distressing. In some conditions hypertension, in others a mean tension, and in still others hypotension are best suited to meet conditions of particular situations. For instance, in emergencies some degree of hypertension is more effective than a relaxed, indifferent status; and conversely, hypertension in an easy situation would be disadvantageous, if not very pathological. But in the general routine of everyday life there is a state of tonus which is more effective, and this status every person must find and maintain.

The degree of tonus is the basis for overt action to a situation. Apply the same situation to different degrees of tonus and we have different kinds of overt adaptation. When we react one way to a situation at one time, and quite differently to a similar situation upon another occasion, we find that our postural tonus or attitude has been very different.

Diagram 3 does not show association paths of individual reflex units with others. Obviously there is an extensive system of integrations which weaves them into a great working unity. We need to recognize, in order to complete our picture, that all neuromuscular segments are rarely ever in the same degree of tension, but that usually some segments are in states of hypertension and others quite relaxed, according to the environmental conditions and the affective and metabolic status of the organism. If we will observe ourselves we can easily feel these shifts of tension occurring within us as our emotions and conscious interests change; as, for instance, from pleasurable, playful interests to serious or dangerous work. We can feel changes occurring as we get hungry, famished, thirsty, cold or hot, tired, go to sleep, or get into heated arguments or accept delightful personal relations. In other words, metabolism, environment, emotion, and mentation influence our postural tensions; and reciprocally, our postural tensions influence our reactions to these internal and external influences.

Our postural tensions in our various visceral and skeletal segments, working as a unity, make up our characterologic attitudes toward our own inner capacities and our external situations, particularly our personal relations. We all know that our attitudes toward a situation determine the way we will think about it, whether we will dislike or like it, coöperate or resist it, etc. We all have experienced the feeling of having a resistant, firm postural tonus persuaded to change to a more relaxed, giving-in quality, and the reverse.

There are still additional factors we need to bear constantly in mind if we wish to have a comprehensive understanding of human behavior for clinical purposes.

No living thing can live for any length of time independently of its environment, and we need to overcome our illusion of personal autonomy. We are constituted of the forces which constitute our environment, and every momentary state of our being (behavior, affectivity, mentation) is dependent upon the forces within us and around

us. Our sensorimotor reflexes are inextricably dependent upon environmental stimuli; hence, whenever we consider the clinical meaning of tensions of a patient's organs we must consider them in relation to his feelings and beliefs about his environmental situation, particularly his personal relations and the nature of these relations.

Through countless repetitions of situations from birth onward, probably all our reflexes have become conditioned to environmental stimuli, so that we are not only incapable of developing any truly independent actions or thoughts, but much of our behavior follows well-defined patterns in a well-defined environment.

I also want to emphasize here the law of neutralization of affective pressure in relation to postural tensions; that, namely, whatever variations of our affective pressure may be developed, whether love, fear, hate, shame, sorrow, or jealousy, they force us to get from our particular environment (or create in it) situations which will counterstimulate us and neutralize these variations until we return to a state of comfortable equilibrium. If we are hypertense and too excited, we need soothing stimuli; and when hypotense we need exciting stimuli. As fast as we build a well-balanced eurythmic status, our environment (particularly our personal relations) and our metabolic functions disturb it and require us to keep on building to the end.

There is, then, an intimate relationship between our emotions, or rather the emotional variations of our stream of affective pressure, and the postural tensions of our vital organs. We are not concerned here as to which is primary and which is secondary. We do know from such experiments as Cannon's and Sherrington's, from clinical symptoms and physiologic functioning in psychopathologic cases, that postural tensions of the viscera form a basis for the quality and quantity of our various emotional reactions, and our emotional reactions certainly influence our visceral tensions and their vital functions. We need but call attention to the relations of hyperthyroidism and fear; how hyperthyroidism increases fearfulness, and fright increases hyperthyroidism.

(To be continued)

ORGANIZED TROPICAL MEDICINE IN THE WESTERN UNITED STATES*

By ALFRED C. REED, M. D.
San Francisco

DISCUSSION by John Martin Askey, M. D., Los Angeles; Robert A. Peers, M. D., Colfax; Alanson Weeks, M. D., San Francisco.

TROPICAL medicine means the practice of preventive and clinical medicine in warm climates. The term is inexact and unsatisfactory and yet it is the best available. All disease processes are modified by climatic conditions, especially by those climatic elements which are associated usu-

ally with the tropics. This means chiefly increased mean temperature, low barometric pressure, and either excessive dryness or excessive moisture. The degree and character of insolation play an important part. Social and sanitary conditions of native races must be considered. Local food supply and food habits, and religious beliefs affecting health are all included. The reaction of all these factors concerns the physician, first in relation to the local or native inhabitants, and second, in relation to foreigners.

SCOPE OF TROPICAL MEDICINE

Tropical medicine is characterized by certain indirect results of warm climates also. Here the insect life is overabundant and furnishes many problems both as vectors and as disease causers which are radically different from those of cooler climates. Poisonous animals and fish are more abundant and in closer contact with human beings under less controlled conditions. Bacteria flourish and take on characteristics which modify disease processes and at the same time means and opportunity for transfer of infection are different and easier. Large populations are either so crowded that health conditions are affected or so primitive that disease prevention becomes difficult or impossible. Poverty, overcrowding, ignorance, and local medical systems completely change the practice of both clinical and preventive medicine. Absence of sanitation and hygienic ideas modify disease control and even the nature of disease.

Tropical medicine also includes diseases and conditions which are to us exotic and which, while thriving primarily in warm climates, are also acclimated and more or less endemic in cool or temperate climates. The term thus includes medical practice in Asia and parts of the Orient which are not strictly in the tropic belt.

THE DEFINITION AS APPLIED TO WESTERN UNITED STATES

With such a definition of tropical medicine it is evident that we have in the western United States many tropical diseases which are endemically established. Examples of these are seen in tularemia, Rocky Mountain fever, coccidioid granuloma, torula, plague, bacillary dysentery, amebiasis and intestinal parasitic affections, liver abscess, trichinosis, pellagra, beriberi, various ringworm infections, undulant fever and malaria. The entire index of tropical diseases, with the possible exception of trypanosomiasis, may be seen sporadically at any time by any physician. Filariasis of various forms, sprue, blood and intestinal flukes, leprosy, dengue fever and yaws are met with occasionally now.

One other feature of tropical medicine, too often ignored in all our medical teaching, is human geography. Space forbids discussion of this fascinating and invaluable field of science. It bases itself on the conception that, just as the earth geographically is a unity made up of many interrelated parts, so is humankind a unity, closely interrelated, and separated, drawn together and, to a surprising degree, controlled by geographic environment. Man in relation to

* From the Pacific Institute of Tropical Medicine of the University of California.

* Read before Western Branch of American Public Health Association at Salt Lake City, June 12, 1930.

the earth is human geography, and this must be a foundation stone in our definition of the expression, tropical medicine.

EUROPEAN COUNTRIES AND TROPICAL MEDICINE

The special nature of tropical medicine has been recognized by all of the European countries. They have found that commerce and transportation on the one hand, and proper protection against tropical disease on the other, make necessary special institutions where the problems of tropical medicine can receive expert attention. Thus we see in Amsterdam the excellent tropical institute operated by the Dutch government. Here regular graduate courses are given to physicians, especially those expecting to serve in the merchant marine and in the Dutch East Indies. Excellent research is carried on also on diseases that are a danger to Holland itself. Germany has the outstanding tropical institute of Hamburg. Here in the greatest German port, in a far northern latitude, we find tropical medicine recognized not as an adjunct to commerce, but as a necessity for foreign trade. Graduate courses, facilities for special workers, a tropical hospital and a large medical research plant are busily engaged in study and in the treatment of actual disease. This institute is supported entirely by the city of Hamburg, although to it come students from all over the world, and in it are treated patients from all over the world. The immediate service to sailors in all of these tropical centers is pre-eminent.

Belgium has an excellent tropical school in Brussels. In Paris are found a group of university and research institutions doing this type of work. The same is true of Rome. England, living by foreign trade, has four schools of tropical medicine of which the largest and best equipped is the London School of Hygiene and Tropical Medicine. A new two million dollar building was given by the Rockefeller Foundation two years ago and has just been occupied for the teaching and research of this institution. A series of tropical and sailors' hospitals are connected with it. These great schools of Europe are all outside the tropics. They have developed because of actual necessity for their service. These countries know from hard experience that without such institutes commerce and foreign trade will not survive. They are advance agents of commerce. They are necessary for business men, travelers, and all who go abroad. Why should not the United States take counsel from this experience of older countries, whose very existence is based on proper foundations for their foreign trade?

UNITED STATES NEEDS THREE CENTERS OF TROPICAL MEDICINE

In the United States at least three centers are needed for tropical medicine. These of necessity must be in the great ports. They must also be located where domestic interests will best be served from the standpoint of research, treatment of patients with these diseases, and availability

for students. The logical places for American schools are in New York, New Orleans, and San Francisco.

A tropical school is best situated when made an integral part of a university and when it is in close or intimate contact with a Class A medical school. Such a situation allows close association and consultation with other related university departments, such as in chemistry, bacteriology, physics, agriculture, animal husbandry, languages, and various lines of engineering and biology. It allows joint research and use of equipment with the medical school. It makes easier undergraduate teaching in tropical medicine. It avoids unnecessary duplication of facilities. It simplifies the problem of hospital space for tropical medicine. It unifies medical activities to the advantage of visiting physicians and students. It assures permanence and economic business management, factors which appeal strongly to financial supporters, and which give to this type of organization peculiar memorial advantages. Finally it permits a teaching museum of tropical medicine and hygiene as a division of the general medical museum, and an extensive tropical library as a division in the general medical library.

THE PACIFIC INSTITUTE OF TROPICAL MEDICINE

Analysis of these various data has led to the establishment of the Pacific Institute of Tropical Medicine as a division in the Hooper Foundation for Medical Research of the University of California. Its location on the Pacific Coast, in a great port, as part of a university, closely associated with a university medical school, and with avoidance of duplication of preëxisting facilities, is the result of years of careful study and extensive consultation. As an indigenous product, its growth must be slow and adapted to the requirements of its actual usefulness. It is organized for work in three definite and specific lines.

The Educational Work of the Institute.—The first of these is educational. Courses will be given to medical graduates in tropical medicine and hygiene, covering some six weeks, and intensively presenting a complete curriculum with adequate laboratory instruction. This course is designed as a complete review for graduates of several years' standing who wish to bring themselves up to date in tropical medicine and also as a specialized presentation of the subject-matter for physicians who have had no detailed acquaintance with tropical medicine before. A seventh week will be given in ordinary public health especially to meet the requirements of public health officers. This will allow those taking the first six weeks to get an acquaintance with the methods of public health work and at the same time those taking the seventh week can add on the sixth week of tropical hygiene and certain phases of parasitology.

Special courses for nurses will be offered when facilities permit, to accommodate nurses going into professional work abroad, whether in a private capacity, in commercial positions, in Red Cross or other semi-governmental lines, or in

missionary fields. Popular classes for travelers and others intending to live or travel in the Orient or the tropics have already been started. Facilities will be provided for a limited number of special workers, both clinical, in pure research and in laboratory and diagnostic technique. Special fellowships will allow more extended research in both clinical and laboratory branches. The staff also offers whatever courses are wished in these lines in the undergraduate university medical school.

The Research Work of the Institute.—The second line of work of the tropical institute is in research. The combination of patients and laboratories makes possible intensive study of patients not only for diagnosis, but also for therapy. Treatment methods need special investigation in the case of every disease in this field. New remedies are constantly being prepared and better understanding of pathologic physiology, changes our understanding of the indications for treatment. In the past year we have conducted a special intensive study of new arsenicals in the treatment of amebiasis. This is being done along the same lines that we are using for study of foreign drugs from native tropical formularies. Analysis is first necessary to determine the active principles and chemistry. Then these are tested out *in vitro* on the amebas or other parasites concerned. Cats, rabbits, and dogs are then used to establish accurate toxicity figures. In some cases the therapeutic effects can be studied at this stage both clinically in the living animal and histologically and pathologically. If the preparation seems thus far to warrant it, monkeys are then treated, and in the case of amebiasis, those having a natural amebic infection are used. If the therapeutic results again are satisfactory, the preparation is cautiously applied to human patients with the disease concerned. There is no doubt that many valuable drugs are used in empirical native practice in the tropics, and study of these is highly desirable and promising. We now are engaged in study of certain drugs used in the old Arabic practice of Egypt. Arrangements are under way for similar studies on drugs from Thibet, India, Iraq, the Philippines, China, and Central and South America.

Research in tropical medicine in San Francisco needs urgently facilities for study of tropical diseases such as the chronic dysenteries, severe primary anemias, splenomegalies, and sprue. Such facilities we expect to have available shortly. Ocean commerce brings many medical problems both of disease on shipboard and of hygiene. Proper medical kits and medical service on shipboard are matters of extreme importance. Ventilation, water supply, protection of food supplies, control of contagious disease carriers among food handlers, control of insects and parasites, various types of cargo spoilage, provision of food and medical supplies for institutions and expeditions—these all have important research problems requiring solution.

The Clinical Activities of the Institute.—The third division of work in a tropical institute is

the clinical care of patients. These are drawn from foreign local populations, returned travelers and business representatives, missionaries, government employees, sailors and foreign travelers in this country. In addition the list of indigenous tropical diseases is so extensive that many patients are found among persons who have never left the United States. Special facilities are available in a tropical institute for diagnosis and treatment as well as for study of these patients, and also a staff is at hand experienced in knowledge of the special problems involved. All of these things make for better service to the patients.

The staff and laboratories necessary in addition to the clinical services will include divisions of helminthology, medical entomology, hygiene, protozoology, bacteriology and mycology, pathology, pharmacology and therapeutics, and chemistry. A teaching museum of tropical medicine and hygiene must be developed for visual medical education. A library of tropical medicine is being organized and developed now which will eventually be as complete as it is possible to make it.

FIELD OF ACTIVITY OF A PACIFIC COAST INSTITUTE

The legitimate field of activity of a tropical institute in the western United States has the following geographic areas which need study along the organized lines just sketched. Spanish America has students, graduates in medicine, business men, tourists, patients, and official representatives who ought to find on our Pacific Coast the things they require. The same may be said for the Pacific Islands, including Hawaii and the Philippines, the Orient, the dry plateau country of our own southwest and Mexico. Each of these sections has medical problems whose solution would be furthered by a tropical institute. A chain of such institutes has been projected for Guatemala City, Honolulu, Shanghai, and Manila, each locally independent and autonomous, but all united in a program such as has been outlined and allowing free exchange of students, special workers and pathologic material, as well as providing coöperation in research to their common advantage.

As has been noted, the Pacific Institute of Tropical Medicine has been established as a division in the Hooper Foundation for Medical Research of the University of California. It is thus located in San Francisco in close association with the extensive research activities of the Hooper Foundation and with the comprehensive plant, staff, and activities of the University Medical School. It has enlisted strong support in shipping and business groups. The press is avid for publicity about it. The nucleus of its development is now in operation. Competent judges consider it essential for medical and commercial development of the West. The names on its medical advisory committee insure the soundness of its policies and activities. It needs realization on the part of the medical profession that here is designed a center where all that pertains to tropical medicine in the broad sense can be focussed,

that here is an institution whose growth is the primary concern of the business community and the far-sighted patriotic benefactor, and finally, that medical science here can offer a service not only of commercial value, not only of humanitarian benefit, not only of scientific advancement, but, above all, of international good-will and pan-Pacific comity.

University of California Medical School.

DISCUSSION

JOHN MARTIN ASKEY, M. D. (1930 Wilshire Boulevard, Los Angeles).—No one who has visited the highly developed centers for the study of tropical medicine in Europe can fail to feel the relative minor interest in tropical diseases displayed in this country. It is true the necessity for protection of trade interests by these countries with large tropical possessions has led to a more intensive study than has been necessary here.

However, the commercial interests of the United States in tropical and semitropical countries are yearly increasing. Communication and contact between the tropics and the temperate zones are rapidly tending to break down the geographic barriers hitherto roughly limiting the activity of tropical disease.

There are few California physicians who have not seen a number of patients with varying types of exotic disease. Travelers or missionaries return with amebiasis or filaria; tourists from Central and South America are found with malaria or sprue. There is a small but constant influx of people suffering from diseases with symptoms seemingly bizarre unless the possibility of tropical diseases be considered. The first case of filaria I saw was in a Chinese student supposedly in the incipient stages of tuberculosis.

In addition to those patients who have brought their diseases from elsewhere, we have a rich native endemic group included in the rare type of tropical diseases. The large number of reports in the last few years by California physicians of patients with amebiasis, coccidioid granuloma, of torula infection and undulant fever, would indicate an aroused interest rather than an increased incidence of these diseases. We are thinking more about them, consequently recognizing more of these diseases.

There is thus an unavoidable interdependence between so-called tropical medicine and general medicine. A keener knowledge of tropical medicine is becoming more and more a necessity for the general practitioner and particularly for those physicians on the seaboards who are in more constant contact with foreign countries.

We are singularly fortunate on the Pacific Coast in having the Pacific Institute of Tropical Medicine. It has been wisely located. As Shattuck says, "The tree of tropical medicine should flourish best in the soil of a well-rounded medical center."

The educational work will have far-reaching effects in helping those who intend pursuing medical work in foreign countries and in increasing the knowledge and efficiency of the practicing physician at home. The paper by Doctor Reed spreads before you a fascinating vista of the work to be done.

The extent to which the Pacific Institute is caring for patients is indicated in the fact that 445 treatments were given to eighty-three patients in the first year of its existence. With such diseases as leprosy, pellagra, and elephantiasis included, one can see the variety of clinical material that will become increasingly available as the institute grows.

No more fascinating diseases exist from the standpoint of unusual pathology and symptomatology than the so-called tropical diseases.

I am particularly interested in the work being done in the study of foreign drugs, used empirically but apparently with success in native practice. We remember the original empirical use of Peruvian bark for malaria. The shrub *ma huang* was used by the

Chinese for five thousand years before ephedrin was isolated a few years ago. We believe that valuable discoveries will arise from the research work at the institute.

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ROBERT A. PEERS, M. D. (Colfax).—Doctor Reed's paper is but another reminder that the United States is no longer a country satisfied to remain isolated geographically, politically, and commercially. With the great growth in population in the United States, the citizens demand and indeed require, in addition to home-grown and home-manufactured foods and supplies, an ever-increasing quantity of imported foods, manufactured articles, and raw materials. Our country has abandoned its old policy of geographical sufficiency and has taken unto itself not only the ownership and government of tropical and semitropical possessions, but in addition has, rightfully or wrongfully, arrogated to itself the policing of smaller countries and exercises paternal supervision of still others. The United States also sends its soldiers, its sailors and its marines to foreign lands and in recent years has at last awakened to the great possibilities of foreign trade. Our fellow citizens have begun at last to understand the meaning of the words "imports," "exports," and "balance of trade," and the great corporations of the United States have at last begun to sense the fact that this balance of trade, favorable or unfavorable, influences prosperity, employment and dividends, and to that end have established agencies, shops, and plants in foreign countries. Ours is a country also which as a result of the great movement of large bodies of men to all parts of the world during the great war and because of the education in foreign travel thus established (which has been further promoted by the great national prosperity following the war, resulting in an immense increase in the popularity of foreign travel) is now beginning to realize that foreign entanglements are not alone of a commercial or of a political nature. Less understood but just as vital, or more so, is the danger of contact with and importation of exotic diseases and disease-producing organisms. As Doctor Reed has pointed out, the older commercial countries of Europe have long been awake to these dangers and have taken steps to safeguard not only their foreign travelers, but also their home population.

It is true that many of our citizens, including not a few of our medical confrères, have long known of the existence of these dangers and of the necessity of taking steps to combat them. It has remained, however, for the University of California to bring into existence and put in action a living organization for the study of tropical disease and for the protection of United States citizens at home as well as abroad. The Pacific Institute of Tropical Medicine of the Medical School of the University of California, the aims and objects of which he describes in his paper, staffed by himself as its chief and with earnest, informed scientific workers; connected as it is with a great university and situated at the gateway to the Pacific Ocean, upon whose waters will, in all probability, be carried a large part of world commerce, this institute under Doctor Reed's guidance will undoubtedly be a potent force in the solution of many problems of tropical diseases, and will aid greatly in the dissemination of information relating thereto and in the protection of the lives and fortunes of our own citizens and of the citizens of all countries interested in foreign trade and travel. Certainly the Pacific Institute of Tropical Medicine deserves the support of California, of its corporations and citizens, and particularly of all members of the medical profession.

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ALANSON WEEKS, M. D. (384 Post Street, San Francisco).—Having served three years in my medical youth as a government surgeon on shipboard over a few of the Seven Seas; having worked for a number of years in the Public Health Service in San Francisco, caring for sailors who came from all countries

of the world; having been associated with Dr. John A. Long in the old Marine Hospital at San Francisco on his return from the Philippines, when he showed us for the first time we had amebiasis as a common disease in California, and taught us that many other parasites heretofore ignored were with us; and having acted as medical supervisor through many years for various steamship companies, the writer feels he can state with some authority that Doctor Reed in his paper has been very modest in calling our attention to the great value of a school of tropical medicine in California.

There is nothing one can add to his paper in the form of discussion, as he has covered the ground so thoroughly. I would emphasize, however, that organized medicine throughout our land should make it one of its first duties to help carry out all the recommendations and suggestions Doctor Reed has so carefully placed before us. The medical men in our country are directly affected by the importation of so-called tropical diseases.

The support for such a school should be more easily forthcoming from "Big Business" because it can be so readily shown to save many dollars of cost on account of quarantine and fumigations, and the loss of time of valued employees through sickness. We all know how much easier it has always been to acquire public moneys for the protection of pigs than for the protection of human babies.

OCULAR MUSCLE OPERATIONS*

By JOSEPH L. MCCOOL, M. D.
San Francisco

DISCUSSION by Roderic O'Connor, M. D., San Francisco; Hans Barkan, M. D., San Francisco.

THE establishment of a correct diagnosis of any pathological condition before applying treatment is so fundamentally sound in principle that it seems rather superfluous to present a paper dealing with such a subject. Nevertheless, it is a fact that the success of an operation on the ocular muscles depends upon accurate knowledge of all factors which enter into the development of the muscular anomaly for which the operation is to be performed. It is only within comparatively recent years that ophthalmologists have made critical studies of underlying causes of motor anomalies before applying treatment. Even today many convergence and divergence anomalies are treated as if they were the result of abnormalities of the lateral muscle when, as a matter of fact, not a few are the result of dysfunction of the vertical ones.

Before discussing in detail the various types of heterophoria and squint that lend themselves to surgical correction, the anatomy of the ocular muscles and the physiology of ocular movements will be briefly considered. This is, of course, familiar ground, and only a few slides to emphasize certain points will be shown.

BROAD SCOPE OF MUSCLE OPERATIONS

All types of motor anomalies are amenable to surgical interference. In order that the subject

may be approached in a systematic way it should be divided into two sections: (1) squint, functional and paralytic; (2) heterophoria.

DIAGNOSIS OF FUNCTIONAL AND PARALYTIC SQUINTS

The differential diagnosis between functional and paralytic squints ordinarily is not very difficult to make. In the first place, the history is often not only suggestive, but in the vast majority of cases is conclusive. This is particularly true in young children.

If the squint is present from birth it is nearly always paralytic, whereas functional squint first makes its appearance when the child begins to regard objects at close range. If the mother is a close observer, her testimony may be relied upon, but it must not be forgotten that in children whose fusion faculty is weak the establishment of binocular single vision may be delayed until the child is nearly a year old. At this time the eyes will be straight and will remain so until something occurs to disrupt the fusion faculty, usually some disease of childhood or a fall. An unobserving mother will, having failed to recognize this interlude, testify that the child's eyes have always been crossed.

Diplopia, the most valuable and constant of all the symptoms of ocular palsy in the adult is of no value in young children, as it is a subjective symptom and, even if recognized by the child, its character could not be determined by the surgeon. Its presence, however, may be inferred by the way the child holds its head. This symptom will be discussed later.

Limitation of movement is much easier to study in an adult than in a child, and yet, even with very young children one can quickly elicit this symptom by utilizing the light projection test. By having the child regard a small electric light in the primary position and then making quick movement of the light laterally or in the oblique positions, the child's eyes will instinctively follow the light and any lagging of one of the eyes may be detected. The difference between the primary and secondary deviation may be determined roughly if the child is at all tractable, although it is sometimes difficult to get a youngster to concentrate on fixation long enough to give the information desired. They are more likely to look at the examiner than at the light.

Enough has been said to show that, ordinarily, it is not difficult to diagnose a paralytic squint even in young children. However, it is not nearly so easy to differentiate purely functional squint from that caused by a slight paresis of one of the muscles, and, because the treatment is radically different, it is a very important differentiation to make.

In functional squint in young children it is rare indeed to find any limitation in temporal rotations, for it is only in those cases which have lasted a long time that contractures and tissue changes take place in the external and internal recti muscles. If, on the other hand, one finds some temporal limitation of movement in one or

* From the department of surgery, University of California Medical School, San Francisco.

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both eyes in a child obviously too young for tissue changes to have taken place, a diagnosis of paresis is justifiable. Certainly it should be given careful consideration in building up our diagnosis.

Of much more frequent occurrence is that type of convergent squint due to congenital paresis of one of the vertical muscles. In this group the superior recti are the muscles at fault in the majority of cases. Either one or both may be affected with or without ptosis. Usually the picture is that of paresis of one superior rectus muscle with secondary spasm of the opposite inferior oblique muscle, an example of primary and secondary deviation. I have seen one case in which the deviation was caused by paresis of the inferior rectus muscle with spasm of the opposite superior oblique muscle. This latter type is rare. A diagnosis of functional convergent squint is made frequently when the cause of the squint lies in a paretic superior rectus muscle. Of course it is very difficult to say how many cases are the result of this anomaly, but I am sure the actual number is greater than is usually believed.

While the recognition of the two forms of convergent squint—alternating and monocular—is not difficult, it is well to remember that the results obtained from the surgical treatment of alternating squint are sometimes disappointing. In alternating squint there is a congenital antipathy to binocular single vision; one may obtain simultaneous macular perception, but no fusion with the amblyoscope. In monocular squint the fusion sense is present though only superficially developed in a large proportion of cases. In alternating squint the best that we can hope for from operation is a cosmetic cure; in monocular squint, if the fusion sense is present and demonstrable with the amblyoscope before operation, binocular single vision may be achieved by surgical means plus amblyoscopic training.

Of the various deviations in which binocular single vision is present, but maintained only by the expenditure of excessive nerve impulses, the vertical ones are responsible for the greatest discomfort to the patient. It is true that esophoria and exophoria can and do cause acute distress to their possessors, but, in my experience, the discomfort is not to be compared to that caused by hyperphoria. The person who has exophoria, though uncomfortable when regarding objects at a distance, suffers more when using his eyes at the occupational distance; anyone suffering from esophoria may be comparatively comfortable when reading or sewing, but may suffer when using his eyes for distant vision. For the hyperphoric person there is no point from infinity to extreme convergence at which the maintenance of binocular single vision is not accompanied by distress of varying degrees. This is directly dependent upon the stability of his nervous system.

In the above, in a general way, the muscular anomalies which, under certain circumstances, call for surgical treatment have been enumerated. With the possible exception of a complete paralysis of an ocular muscle the presence of which

can be detected by one symptom, limitation of movement, it is necessary to study the patient by applying a number of diagnostic tests.

DIAGNOSTIC PROCEDURES

The importance of a careful history has already been mentioned. This cannot be overestimated in making a diagnosis. A comparative study of the vision of the two eyes in any case of squint will enable us to determine whether it is alternating or monocular. Any disparity in the corrected vision of the eyes, in the absence of any opacity in the media or of fundus disease, points to monocular squint. In alternating squint corrected visions in the two eyes is equal, or nearly so.

In every case of squint an effort should be made to determine, by means of the amblyoscope, the state of the fusion faculty. If simultaneous macular perception only is present before operation, a cosmetic result may be expected. True fusion with or without amplitude offers the prospect of a functional as well as a cosmetic cure. If the child has depth perception before operation, the prognosis is still more favorable. The deviation in degrees of arc should be measured by any of the familiar methods.

Of the various tests for the diagnosis of heterophoria and squint, there are none which can compare in simplicity and effectiveness to the screen and its subjective complement, the parallax test. Because of their reliability in diagnosis the writer will describe them as he uses them, with particular reference to the information to be gained by studying the behavior of the eyes in the six cardinal directions of the gaze.

The patient is directed to look at a spot of light slightly below the level of his eyes twenty feet away and a blinder is passed quickly to and fro from one eye to the other.

If there is orthophoria neither eye will deviate when covered and each, consequently, will remain steady when the screen is removed. If, however, there is a squint or heterophoria of more than a degree or two, each eye when covered will deviate and when uncovered will turn back into fixing position. Thus, if there is either an esophoria or convergent squint, each eye in turn will deviate in, or toward the nose, when covered and will swing out again when uncovered.

Squint and Heterophoria.—Having thus ascertained that a deviation is present, we next differentiate between a squint and heterophoria. To determine this we make the patient look fixedly at the test object with both eyes open, and then alternately cover and uncover one eye, say the right, leaving the other uncovered all the time (method of binocular uncovering). By thus covering the right eye we compel that left to fix, if it is not already doing so, and we allow the right eye to deviate if it has any tendency to do so or if it is not already deviating.

In this case three conditions may obtain:

1. There may be heterophoria. In this event the left eye which if fixing already will continue

to fix when the right eye is covered, and the latter, which was fixing before being covered, will deviate. Then when the cover is taken off again the right eye will swing back into place and the left eye will remain fixing, *i. e.*, both on applying and removing the screen but one eye will move, and that the one which is being covered.

2. There may be squint of the right eye. In this case the left eye, which was fixing before the right was covered, will continue to fix, and the right eye, which was deviating before it was covered, will remain deviating. Then when the right eye is uncovered again, the left eye will still remain fixing (because it is the eye that habitually fixes) and the right will still remain deviating (because it is the eye that habitually deviates). That is, both on covering and uncovering, neither eye moves, provided the cover is put over the squinting eye.

3. There may be a squint of the left eye. If so, the left eye, which was deviating before the right was covered, will now have to move into place in order to fix. As it moves into place, the right eye, which is behind the screen, will move out of place. Then when the screen is removed the right eye, which has thus become deviated, will move back into the fixing position, since it is the right eye which ordinarily fixes when both eyes are open, and the left eye will move out of its fixing position and back to its ordinary position of deviation. That is, both on covering and uncovering, both eyes move, provided that in the case of a squint the screen is put before the fixing eye.

If repeated applications of the test show that sometimes the right eye squints, sometimes the left, we are dealing with alternating strabismus.

As we are passing the card from eye to eye in making the screen test, we ask the patient whether or not the object at which he is looking seems to move. If it does, it means that he is actually seeing double, only, instead of seeing the two images simultaneously, he sees one after the other. Thus, if, on uncovering the right eye, the object seems to move to the right, it means that the right eye image is to the right of the left eye image, *i. e.*, the patient has homonymous diplopia (esophoria). If under the same conditions the object seems to move to the left, he has crossed diplopia (exophoria). If it moves down he has a right hyperphoria; if up, a left hyperphoria.

While these tests are accurate and reliable when applied in the primary position, their value is greatly enhanced when the eyes are turned in the four oblique and two lateral positions, for it is in these positions that a deviation, the result of paresis of one or more muscles, will reveal itself.

However, before making the screen test and parallax test in the outlying field, it is better to investigate the field of binocular single vision with a red glass before one eye. If diplopia develops, it usually points to the offending muscle or muscles. Not infrequently, in spite of the

interposition of the red glass, the fusion sense is so strong that there is no diplopia. In these cases the screen and parallax test may be used with the result that fusion is coaxed into abeyance and a characteristic diplopia develops.

Occasionally, if the patient is told to gaze steadily at the point of light held in the field under examination for ten or fifteen seconds, the eye with the weaker muscle will gradually lag enough to isolate the offending muscle.

One of the best means for revealing latent deviation is the monocular patch. In this country Marlow and O'Connor are the chief advocates of this method of diagnosis. Duane disagreed with them, believing that "prolonged occlusion did not reproduce the actual motor relations as they exist in the given case, but rather tended to make the eyes revert to their infantile state in which, not being controlled by coordinate impulses, they exhibit a varying imbalance."

I believe this objection to the method is more fancied than real, for it is hard for me to believe that the use of the monocular patch for one week on an individual who has enjoyed binocular single vision for all but a year of his life would so far disrupt his fusion sense as to permit his eyes to wander as they did in infancy. Whatever one may think of its value in revealing latent errors in motor balance, there can be no question as to its usefulness in differentiating muscular ametropia from accommodative asthenopia. The information gained from a study of the field of monocular fixation is helpful but by no means conclusive. If three readings taken on the lateral, vertical and oblique positions show a consistent limitation in one field, the muscle whose action is predominant in that field may be considered to be deficient in power.

A study of the action of the two eyes working together is of far more practical importance. A small electric light is best suited for the purpose. The patient is asked to follow the light with both eyes open when it is carried in the six cardinal directions of the gaze. If one eye lags we suspect the muscles into whose field of action we are carrying the light. While doing this it is well to observe the action, not only of the supposedly paretic eye, but also of its fellow. This test should be made with both eyes open, followed by a test with one or the other eye screened from the light but not from our view. Take, for example, suspected palsy of the right external rectus muscle. When the eyes are carried to the right the right eye lags while the left follows the light. During this maneuver, in all probability the left eye will fix. If, however, we screen the left eye and make the right eye fix while carrying the light into the field of action of the right external rectus, the left eye will be seen to deviate markedly to the right as the result of secondary deviation caused by overaction of the left internal rectus.

Even though this paper deals with the surgical treatment of muscular deviations, it must not be assumed that nonsurgical treatment has been neg-

lected. The refraction, under the most profound cycloplegia, should be carefully estimated in all individuals up to the age of forty-five. However, patients forty years old and over should have tonometric measurements made before using a cycloplegic and, if the readings are around the upper limit of normal, they should be kept under observation until the pupils have returned to normal. Without entering into a discussion of the refractive side of this subject, I should say that wearing glasses which correct a low compound hypermetropic astigmatism with the rule will have but little influence in correcting a deviation. The same cannot be said of higher errors, especially if the astigmatism is oblique and myopic. Myopic astigmatism and anisometropia are, however, important factors, and a correction for the latter should be worn long enough to remove any possible doubt in the mind of the surgeon that the deviation was caused by the ametropia. Fortunately for our patients the number of those who still cling to the belief that if the refraction is corrected the deviation will take care of itself, is gradually, though none the less surely, diminishing and I hope will finally disappear.

SURGICAL TREATMENT OF MUSCULAR ANOMALIES

In the surgical treatment of muscular anomalies we have four types to consider:

1. Complete paralysis of one or more muscles in which the rotational power of the muscle is completely abolished.
2. Paresis of one or more of the muscles in which the rotational power is diminished but not abolished.
3. Functional squint in which the deviation is caused by faulty coördination and not by any inherent weaknesses in the muscles themselves except in a very limited number due to structural and insertional anomalies.
4. Heterophoria caused by paresis of one or more muscles, faulty coördination, or structural anomalies and insertional anomalies.

When the deviation develops as the result of a complete paralysis of one of the ocular muscles, the lesion is usually in the nerve supplying it. In a small percentage of cases, especially in those following injury, the muscle itself may be injured; or it may be congenitally deformed or absent. Surgery, therefore, must be directed toward other muscles whose function has not been impaired. If the recti muscles are at fault, portions of the adjacent recti muscles may be transplanted and attached to the insertion of the paralytic muscles with very satisfactory results. If the superior oblique muscles are palsied, two procedures are available, both of which are planned to compensate for the elevation, adduction, and extorsion of the eye caused by palsy. A recession of the opposite inferior rectus muscle may be done, or the superior rectus muscle in the paralyzed eye may be transplanted back and to the temporal side of its original insertion.

So long as a muscle is not completely paralyzed, but retains a measure of its rotational power, it may be attached directly. In low deviations a shortening of the offending muscle may be all that is needed. If, however, the deviation is fairly high this procedure may have to be augmented by a recession of its opponent.

In functional convergent squint in which it has become evident that conservative treatment will not cure, the surgeon should not hesitate to advise operation even as young as four years of age. The operation of choice is, of course, a shortening of one or both external recti without any interference with the internal recti. Where the convergent squint is of long duration and is considerable in amount, the surgeon is justified in supplementing the shortening with a recession of one of the internal recti; later the opposite internal rectus may be receded if conditions warrant it.

In divergent squint, shortening of the internal rectus muscle with complete tenotomy of the external rectus on the deviating eye is the operation of choice. If the effect is insufficient, a shortening of the opposite internal rectus may be done, supplemented by a more complete tenotomy of the external rectus later if it is indicated.

In hypertropia, if one eye is amblyopic the superior rectus of this eye should be shortened, supplemented, if necessary, with a recession of the inferior rectus. Here, however, a cosmetic result only is sought. If the vision is equal, or nearly so, in both eyes, and if by vertical prisms we are able to establish fusion, a recession of the opposite superior rectus should be performed if the full correction of the deviation is not attained by shortening of the superior rectus of the hypotropic eye. Where there is any possibility of securing binocular single vision it is better not to disturb the inferior rectus if it is possible to avoid it.

Heterophoria offers ample opportunity for the application of surgical measures for its alleviation. Many patients, sufferers all their lives, have been made comfortable by carefully planned and well-executed operations of the offending muscle or muscles. We must not lose sight of the fact, however, that, with the exception of those cases of heterophoria caused by paresis and the few cases dependent upon structural and insertional defects, the vast majority are caused by faults in the coördinate movements of the two eyes.

Hyperphoria.—Before considering any operations for hyperphoria it is well to remember that the spurious forms must be ruled out. I mean by this that not a few cases are the result of a refractive error. Obviously this must be corrected and observed for at least six months. We must also rule out the results of diseases of the central nervous system and the toxemias, syphilis of the brain and cord, neoplasms, lethargic encephalitis, diphtheria, influenza, diabetes, and so forth, before considering operation.

The remaining varieties of this imbalance, namely, the intrinsic and paretic, are the ones to which we should direct our attention.

If the deviation does not exceed four prism diopters and the patient is made comfortable with the vertical prisms in his correction, I believe an operation should not be performed, with this exception: if it can be shown, and this is easy to do, that the asthenopia is muscular rather than ametropic and the individual is anxious to dispense with glasses, I believe we are justified in recommending a shortening of one of the vertical recti muscles for the correction of the defect. If the deviation be more than four prism diopters, wearing prisms is sometimes annoying to the patient, and, because we can offer them a reasonable prospect of relief, we should urge operation.

The operation of choice is a shortening of one or more of the vertical recti muscles. It is worthy of special mention that a tenotomy should never be done for hyperphoria.

Esophoria.—The patient with esophoria is extremely difficult to handle either surgically or otherwise, for back of the anomaly lies a very unstable nervous system which is usually the cause of it. On the other hand, unless the deviation itself is properly handled it tends to aggravate the underlying condition. In other words, a vicious circle is established which is often very baffling. The use of prisms in the correction is seldom beneficial.

In divergence insufficiency a shortening of one or both external recti is indicated, but if in addition to this there is a convergence excess a moderate recession of one, or even both, internal recti may be needed. Theoretically recession of one or both internal rectus muscles should be the operation of choice, but in practice it is safer to shorten the external recti and rely upon other measures to reduce the sensitivity of the nervous system.

Exophoria.—If there is a pure divergence excess with ample convergence, especially in the low amount, I always use prisms supplemented by orthoptic training and proper hygienic measures. If the exophoria for distance is under ten degrees, and particularly if prisms in the correcting glass fail to give relief, a tenotomy of one, or even both, external rectus muscles may be sufficient. It is, of course, understood that the lateral expansions of the tendon are left intact. If, in addition, there is a definite convergence insufficiency, a bilateral shortening of the internal recti is indicated. However, it must not be forgotten that of all the different types of muscular anomalies it is this one which responds best to orthoptic training, and this should always be given most thorough and conscientious attention before operation is considered.

It is, of course, obvious that no hard and fast rules can be applied in treating these anomalies, and very careful studies should be made of each individual before operation is recommended. Furthermore, all nonoperative measures should be given a fair trial. If they fail, however, operation should be advised and urged, for with the

surgical means at our disposal any competent surgeon should be able to make these people comfortable.

SUMMARY

1. A knowledge of the anatomy and physiology of the neuromuscular apparatus is essential before operating on the ocular muscles for the correction of heterophoria or squint.

2. In paralytic squint portions of the adjacent muscles must be used to effect rotation in the fields of action of the palsied muscle; no operation on the affected muscle will change the position of the eye. If the muscle is only paretic, much can be gained by shortening this muscle. If, however, the deviation is fairly high, this procedure may have to be augmented by a recession of its opponent.

3. In functional convergent squint in children under six years of age it is better to shorten one or both external rectus muscles, reserving control tenotomy or recession of the interni for subsequent adjustment of the visual axes. Where the convergent squint is of long duration and considerable in amount, the surgeon is justified in supplementing the shortening with a recession of one of the internal recti; later the opposite internal rectus may be receded if conditions warrant it.

4. In divergent squint shortening of the internal rectus muscle with complete tenotomy of the external rectus in the deviating eye is the operation of choice. If the effect is insufficient, a shortening of the opposite internal rectus muscle may be done, supplemented by a complete tenotomy of the external rectus later if it is indicated.

5. In hyperphoria if the deviation is four diopters or less, prisms will usually suffice. If greater in amount, shortening of the weaker muscle will usually suffice. A tenotomy should never be done for hyperphoria.

6. In esophoria, theoretically, recession of one or both internal rectus muscles should be the operation of choice, but in practice it is safer to shorten the external recti and rely upon other measures to reduce the sensitivity of the nervous system.

7. If the exophoria for distance is under ten degrees, and particularly if prisms in the correcting glass fail to give relief, a tenotomy of one or even both external rectus muscles may be sufficient. It is, of course, understood that the lateral expansions of the tendon are left intact. If the exophoria for distance is more than ten degrees, shortening of one or both internal rectus muscles is indicated. This treatment is particularly also indicated in convergence insufficiency when there is no exophoria for distance.

450 Sutter Street.

DISCUSSION

RODERIC O'CONNOR, M. D. (450 Sutter Street, San Francisco).—Doctor McCool and I are medical classmates and we have kept in fairly frequent contact since I came to California in 1914, after my resignation from the Army Medical Corps. He adopted my "cinch" or "hitch" tendon-shortening method soon after I announced it in 1912 and has never given

it up. I wish to take this opportunity to thank him for his strong argument in its favor before the 1929 meeting of the American Academy. The Barkan brothers are recent converts, and are apparently very enthusiastic.

Doctor McCool and I have had frequent talks on our pet subject, and so far have found only one thing upon which we disagree, namely, tendon recession. I do not like it because a complete tenotomy is done and scleral sutures are used, neither of which procedures appeals to me as safe surgery. It takes very little set-back of a tendon to destroy the power of convergence which should be preserved in *all cases of esophoria* and in those of esotropia where we hope to secure binocular vision.

When more than one tendon shortening is required I prefer a definite two-stage tenotomy. This consists of a central tenotomy, leaving uncut marginal bands about two millimeters wide. These are strong enough to take the full muscle action. If more effect is desired, a measured amount of the central section may be excised, in which event the whole procedure becomes a two-stage resection. After a month, during which time the cut portion reattaches to the sclera slightly back of the original insertion, the marginal bands are cut without touching the central portion. The central cut is usually made at the time its opponent is shortened because it can cause no harm. Frequently the marginal cuts are not needed. The advantages of this scheme, *which I believe is original*, are that at no time is control of the globe lost, such as might happen after a tenotomy anchored by scleral sutures, and we have avoided the use of such sutures. This fits in with my whole idea of muscle surgery which is to do all the work on tendon tissue, carefully avoiding the globe.

This scheme was explained to Doctor McCool several years ago when he came down from Portland to see, by assisting in a number of operations, just how I did my shortening. Apparently I did not convert him to its value.

This two-stage operation works out very nicely in cases of exophoria with strong convergence. Recently I operated on a little girl of nine who had twenty-two degrees exophoria which was reduced to four degrees by this method applied to both eyes. She permitted it to be done under local anesthetic.

As to vertical deviations. For many years this has been my pet hobby, as I feel that only by my method can most of these be handled surgically with safety. The following cases emphasize Doctor McCool's argument.

At the 1923 American Medical Association meeting I presented a little girl in whom a marked left esotropia was changed to an esophoria by shortening the right superior rectus as the *only* operation.

Another patient had twenty-five degrees of exophoria with a noncomitant left hyperphoria twenty-three degrees due to a definite right superior rectus paresis. Shortening this tendon caused complete disappearance of both deviations as shown by maddox tests.

At this place I wish to make a point in the diagnosis which was not emphasized in the paper. When such patients fix the light in downward rotation the eyes usually come parallel, as shown by the light reflections centering in each pupil. On upward rotation the deviating eye takes its lateral position and is higher than the other.

A complicating feature of these cases is the frequency with which the eye with the paretic superior rectus is used for fixation, the eye with the normal muscle squinting. When it is suggested that operation be done on what the parents or patient think is the good eye, the "ruction is on." It took me three years to persuade the father of the little girl mentioned above, and he is a medical man.

A third patient upon whom operative procedures have just been finished had as his first complaint "terrific headaches." His tests showed esophoria nine degrees before monocular occlusion, which caused in-

stant stoppage of the pain. His condition finally settled to hyperphoria three degrees, and to lateral orthophoria. Prism three degrees, divided equally, was ordered, with no return of headaches. A refractive error of cylinder one diopter in each eye was ignored at this trial of prisms, proving that the sole cause of his symptoms was the hyperphoria. After wearing the prisms, only three degrees of the original esophoria returned. Consequently I do not agree with Doctor McCool on the point of lenses during vertical deviations, and must repeat that the true state of affairs can only be found by monocular occlusion.

When should squints be operated?

For many years I have been doing these operations as close to the third birthday as possible, with some as early as the middle of the third year, provided, of course, that corrective lenses have failed to straighten the eyes. The eyes *must be parallel—a mere reduction in the degree of squint being worthless from the standpoint of binocular vision*. This point I explain carefully to the parents. In this connection I wish to make the positive statement that I have never seen eyes come parallel with correction, unless they did so as soon as it was put on or, at least, as soon as the effect of the atropin is off. Therefore, if one is certain of the accuracy of his correction, there is no need to wait for years or to make many examinations and changes in prescriptions.

I am now of the opinion that the interests of the vast majority would be best served by operating as soon as the squint appears and with one year as the lower limit. To my viewpoint this is the only way by which a child can be given a chance to learn binocular vision in a normal manner. By this practice I believe we could prevent the development of the habit spasms and relaxations that appear in accordance with Sherrington's law. My shortening can do no harm and, of course, tenotomies would be out of the question in such small children. I am aware that some unnecessary operations would be done but, as Deaver used to say about immediate appendix operations, "The thing that is best for the greatest number is the thing to do."

As to tendon transplantation. I have worked out two variations of transplantation for abducens palsy. One is the use of the pair of muscles complete instead of the outer halves. I have done this operation five times, but in two of the patients marked vertical deviations were produced which makes me prefer the second method. This is a transplantation of the *inner* three-fourths of the vertical recti, *under* the uncut outer fourth, to the externus. By this procedure all of the tendon is external to the median plane of the eye, thus increasing the chance of securing outward rotation, and there is no tension against the anchoring suture such as occurs when the inner portion is left in place. I recently operated, for Dr. Otto Barkan, both eyes of a congenital bilateral abducens palsy by this method, with results satisfactory even to the patient.

The possibility of operating for triple effects was not mentioned in the paper. This is to be considered when a worthwhile amount of cyclophoria is present. For instance, if an operable case of esophoria shows plus cyclophoria and hyperphoria in one eye, a shortening of the lower margin of its externus tends to give a triple correction. Similarly in a case of exophoria with plus cyclophoria and hyperphoria in one eye, a tenotomy of its externus, *except its lower margin*, tends to secure a triple effect. Many times I have been successful in these cases.

I have said nothing about the tests and methods of establishing a diagnosis because the paper left nothing to add. I am sorry that the comments on monocular occlusion were so lukewarm in its favor, because its use in about twenty-five hundred people makes me certain of its value as I am of the need for cycloplegics in refraction work. In fact, I could get

along much better without the latter, if forced to give up one of the two.

The lesson to be learned from this paper is that muscles must not be operated by rule of thumb methods such as, "advance the externus and cut the internus." Operators *must learn* that "rough stuff" is entirely out of place in a *delicate surgical procedure that aims to parallel the visual axes*. Muscle surgery is just as much a specialty in itself as plastic or neurologic.

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HANS BARKAN, M. D. (490 Post Street, San Francisco).—Doctor McCool's excellent summary of methods of diagnosis of the 'phorias and 'tropias needs no comment. It is logical, definite and to the point, and the beginner in ophthalmology could do no better than to systematically follow the routine he outlines.

We are also advocates of early operation, provided that a reasonably quick, satisfactory result is not obtained by glasses, fusion exercises, etc. Since adopting Doctor O'Connor's operative method we find that operation can be performed at early ages. No harm can be done and an opportunity for fusion training is obtained early in life. I would caution, however, to remember that the swing of the pendulum frequently goes too far in one direction and not to forget the many good results obtained in previous years by occasional carefully performed tenotomies and by systematic occlusion, glass-wearing, and exercises over longer periods. We have repeatedly seen third degree fusion established in children with no binocular vision before operation, when operated upon and trained afterward, even at the ages of seven to nine years, so that to obtain this desirable result it is not *always* necessary to operate at a very early age, although many times desirable, seldom meeting with any difficulties. The O'Connor operation, as such, we adopted as the most perfect mechanical means of straightening eyes at any age. With such perfect mechanical means the results have been highly satisfactory.

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DOCTOR MCCOOL (Closing).—In reply to Doctor O'Connor's criticism of the recession operation, I should like to say that if the sutures are placed so that they do not pierce the sclera, and only include the superficial fibers, the operation is perfectly safe and effective. One need not fear a loss in converging power unless the tendon insertion is set back too far. It is easier to do and, I think, quite as effective to use three mattress sutures of fine silk and insert them in the thick scleral tissue around the old stump of the tendon.

I do not think that convergence is weakened to any greater extent than it would be by the two-stage operation, and the advantage of one operation over two is not to be lightly considered.

The point brought out by Doctor O'Connor about the difficulty of persuading the patient that at times the eye that deviates is the wrong one to operate upon, is important. Of course we know that this is due to the well-known fact that patients prefer to fix with the paretic eye to make diplopia less disturbing.

The citation of one case of hyperphoria made comfortable by vertical prisms does not disprove my statement that there are certain cases of hyperphoria dependent upon ametropia and that these will disappear when the refraction is properly corrected.

With reference to the age at which operation should be performed, I think that Doctor O'Connor and I are in accord, with this exception: I do not believe that if the eyes do not become straight as soon as the glasses are worn and the atropin wears off that they will not become straight without operation. I believe glasses should be worn at least a year before we can say with certainty that they will not cure the squint.

THE RELATION OF PATHOLOGY TO LEGAL MEDICINE*

By ZERA E. BOLIN, M. D.
San Francisco

IT is my purpose to contrast briefly the status of legal medicine in Europe and America; to show the close relationship to pathology and to propose a scheme for the organization of an active department of legal medicine in the medical schools of the country, using as far as possible the existing conditions.

I take my definition of legal medicine from Draper's textbook: "Legal medicine is that department of medicine which teaches the application of every branch of medical knowledge to the needs of the law, whether civil or criminal."

THE CURRICULUM AND LEGAL MEDICINE

Having this definition in mind, it is obvious that every physician, whether he be a general practitioner, a specialist, or a laboratory worker, will have use for legal medicine in his work. Thus it follows that every medical student must be allowed the opportunity to obtain knowledge in the subjects treated upon in legal medicine. If this is true, where shall the student obtain such knowledge? There are those who say that each department in the medical school should consider and teach legal medicine. Let the professor of chemistry teach the detection of poisons, the identification of blood stains. Let the anatomist discuss the identification of human bones, the age and sex and proportions of the body, the effects of exposure and decomposition. Let the surgeon warn against malpractice in treating fractures and dislocations and fully describe knife and gunshot wounds, and automobile injuries. Have the obstetrician discuss the duration of pregnancy, the diagnosis of rape, abortion and delivery. Allow the pathologist to direct attention to the technique of medico-legal necropsies and describe trauma. It has been urged that these subjects be introduced in their proper place in each course, thus covering the field.

The refutation of the above proposals is that in present-day teaching the work is left undone. An instructor in a medical, as in other schools, teaches what interests him. If he dislikes a topic, it is treated briefly or not at all. Then, too, there are many subjects that are not properly placed in any course. Are these to be omitted even if they are as important as medical evidence in court, the identification of bodies, the rights of a physician and patient, and the liability of both?

Another group of critics who oppose a separate department of legal medicine in the curriculum will say that if a physician is well trained and knows his anatomy, chemistry, surgery and obstetrics, if he is honest and tells the truth, that he need not fear attending any court. This is true as far as general knowledge goes, but medical questions assume a very different aspect and

*From the department of pathology, University of California Medical School.

*Read before the Pathology and Bacteriology Section of the California Medical Association at the fifty-ninth annual session at Del Monte, April 28 to May 1, 1930.

reflect new and novel hues when viewed in the glare of the court than if seen in the mild light of the sickroom. Many a case could be recited of a physician well trained, and versed in the latest advances of medical science, who left the witness-stand mortified at the sorry presentation that he had made; a result of inability to prepare the facts for best consideration. Let me cite two notable cases. John Hunter, a man then at the head of his profession, had the finest of training and the soundest of medical knowledge and yet when asked to give evidence for the defense of a man accused of poisoning by cherry laurel water was of so little assistance to his side, and gave such poor answers to the court, that it created a great impression on his colleagues. A probable fortunate result was the establishment shortly after of the first course of legal medicine in Great Britain. On the other side of the picture is the experience of Robert Koch. He was at the time a country practitioner in a very small hamlet in Germany, but he probably had the normal German training in an institute of legal medicine. He was called as expert in a poisoning case and, due to his analysis and medical testimony, attracted such attention that it markedly influenced his career.

Then, too, a different set of observations is needed when the case assumes a medico-legal aspect. Let me remind you of the experience of Sir Astley Cooper. He was called to see a man who had been shot by an unseen person while sitting in a chair in his room. After having done what he could for the patient, he investigated the circumstances as to the direction of bullet, wound, chair, and so on, and came to the conclusion that the man had been shot by a left-handed person. This preliminary observation was enough to start the inquiry in the proper direction and led to the arrest, trial and conviction of the guilty person.

A SURVEY OF COURSES IN EIGHTEEN MEDICAL SCHOOLS

With facts such as these in mind, I scanned the catalogues of eighteen of the medical schools in America to ascertain, first, if regular courses in legal medicine had been offered; second, in what department they were taught and by whom; third, the number of hours and the subject-matter covered. Let me give you briefly the results.

Of these eighteen medical school catalogues, fifteen had announcements of courses in legal medicine or in an allied branch. The titles were as follows: Three called it "Legal Medicine"; four called it "Medical Jurisprudence"; two called it "Medical Jurisprudence and Toxicology"; two had no title at all; one called it "Social Hygiene, Criminology and Preventative Medicine"; "Medical Jurisprudence, Hygiene and Preventative Medicine"; "Medical Jurisprudence and Medical Ethics"; and "Medical Law."

The course was taught in a separate department in eight schools, in the medical department in two schools, and in a combination of physiology and physiologic chemistry in one school, and (note this well) in the department of pathology in only one school. Two schools had no data.

Even more astounding was the information concerning the teachers of the courses. Lawyers gave the courses in five schools. Physicians taught it in three schools; and a combination in one school. In one school, a course was given by lawyers and social service workers; in another, by any doctor chosen as a preceptor. The most confusing fact was to find one course taught by a bacteriologist who also taught protozoology and water analysis!

The subject-matter presented varied greatly. The following is a partial list: malpractice, relation of the physician and the law, regulation of the physician by law, court procedures, evidence, toxicology, examination of stains, professional rights, liability of physician, insanity, medico-legal postmortems, identity, and many more isolated subjects. Note where the subjects of interest to the pathologist rank in the list.

In addition to the above, let me state that in all the catalogues and references and by personal inquiry, there is presumably not a single medical school in this country where a student may be instructed in the duties that devolve on him when in contact with a crime or accident.

And, furthermore, all the subjects were taught by lecture only. Only one school used demonstrations, and another used its museum. The hours given to legal medicine varied from eight to thirty-two hours. It is usually given in the last year of the medical course.

In this country, we have not a single institute of legal medicine, and we are lacking in journals dealing with subjects of importance in legal medicine.

COMPARISON WITH COURSES IN EUROPEAN MEDICAL SCHOOLS

Let us now set against this rather dreary picture the conditions that obtain in Europe, with the exception of England.

With most European countries, the medical-legal institute is a force in the community. It has the status of a department in the university. It has a director who is a medical man and who is usually a pathologist. He has as assistants physicians trained in bacteriology, immunology, chemistry, toxicology, anthropology, and medical law. The institute coöperates with the police, the psychiatric clinic, and the prosecutors. Of the twenty-two European medico-legal institutes that have been covered by my reading, I will give you a complete picture covering the main facts as applicable for the universities in these countries.

The titles of the institutions are usually that of "The Institute of Legal Medicine" of the corresponding university.

Courses are taught in all of them. These range from the usual course of one semester of an average of about one hundred hours to a course of a year's duration and many more hours. These courses are compulsory and the state examination is composed in part of questions on medico-legal subjects. Other correlated courses are given. Graduate students are taken and trained along lines of their choosing. Courses are given to the

law students and graduates. The police are trained for special work in the institute. In some countries a man doing the work of a coroner in this country must have a diploma or certificate from one of these institutes. Close coöperation is had with the other departments in the university, especially pathology, anatomy, chemistry, obstetrics, psychiatry, and so forth.

The courses are taught by the director and his specially trained assistants in a logical way.

The subjects taught vary with the country, but usually comprise the following: medico-legal postmortems; identification of dead bodies; toxicology, especially as regards the symptoms, the postmortem, and the proper handling of specimens; thanatology; violent death; wounds, anthropology, especially of criminals; mental diseases and the law; perversions of sexual instinct; pregnancy, birth, delivery and abortion in their legal aspects; rape, marriage and divorce; compensation and industrial injuries; stains, especially of blood and semen; hair; electropathology; and many others.

These subjects are taught by lecture, demonstration, museum work, and assignment of special problems. Courts and asylums are visited. Necropsies are performed. Every proper pedagogical instrument is used.

However, this does not end the activities of these institutes. They act for the police and hold necropsies on all cases of violent and suspicious death. Likewise, they do the autopsies at the request of the civil sanitary authorities, especially in the case of epidemics. There are many examinations of material outside of their own surroundings, such as hair, stains, and suspected poisons. They examine the circumstances and referee in cases of industrial accidents and hazards. They examine sexual derelicts and cases of criminal abortion. They act as psychiatric investigators. Each institute has its museum, which includes wet and dry specimens, skeletons, skulls and bones, illustrative cases of wounds and injuries, photographs, anthropological specimens, and a large collection of criminal implements.

A library is included in each institute which varies from a few books to five thousand volumes. Here are found also the publications on medico-legal subjects from all the world.

In addition, research is carried on and papers prepared. The subjects vary with the country and the personality of the director. Usually the topics include criminal anthropology, laboratory technique, preventive measures against crime, industrial injuries, or the legal aspects of insanity.

The institute acts as adviser to the judge and courts, and is often called upon to give opinions upon cases having a medico-legal aspect.

There are several societies for the study of the problems of legal medicine, notably in Rome, Vienna, Berlin, and Paris.

HOW CAN THE AMERICAN SITUATION BE REMEDIED?

Having shown you these two contrasting pictures, what can be done to remedy the situation in our country and in England?

One of the severest criticisms of the coroner systems of handling medico-legal work is that it has led in no instance to the formation of institutes of legal medicine. We have, in the medical examiner system in New York and Massachusetts, potential institutes. Especially in New York, with a little financial aid, a beginning could be developed about the medical examiner system and the Bellevue Hospital. An attempt has been made in London to start an institute.

In America, we are confronted with three things that hold back the formation of institutes in the medical schools. These are: first, public indifference; second, lack of financial support by the political powers; and third, the coroner system.

The public indifference can only be overcome by showing the necessity for such an institute and by proper publicity. If an institute could be started, however feebly at first, and its qualities in several outstanding cases be proven, the financial aid and the publicity would follow.

The coroner's office is quite another matter. That type of office, with its forms of investigation, is seemingly firmly planted on our political organizations. Although both lawyers and physicians know of its incapacity to function properly, it will take years of work with the public and politicians before a better system can be instituted. However, since a beginning has been made in New York and in Massachusetts, and in 1927 in New Jersey, it may be possible to do it gradually for other states. But we cannot wait for that.

A PROPOSED PLAN

I would suggest the following plan to the medical schools, especially those located in the larger urban centers:

First: The appointment of a pathologist as organizer of an institute of legal medicine. This would necessarily, at first, be a part of the department of pathology, since most of the material and laboratory assistance would come from this department.

Second: Allow this director to organize a provisional department, using the personnel of the other departments of the medical school. Each of the departments of medicine, obstetrics, psychiatry, psychology, bacteriology, chemistry, surgery, etc., could loan an interested man to the new institute for as much time as necessary to carry out his part of the program of the institute.

Third: With the advice of the judges and bar association, appoint one or more graduates in law who are interested in legal medicine and who would coöperate on the legal side.

Fourth: Form connections with the police department and offer the services of the institute in their problems, asking in exchange the opportunity of using such of their material for teaching as is necessary.

Fifth: Offer the services of the institute to the coroner's office or ask the coroner to appoint the director or some other representative of the institute on his staff as pathologist.

Sixth: Offer the institute and its facilities to the State Compensation Board, insurance com-

panies and like organizations. They could get unbiased reports which could be a source of income.

The teaching in an institute of this kind could be correlated by the head of the organization. It could be concentrated in a half year, or diffused through several years. The connections made with the police and coroner would allow the students to see the results of accidents and crime. They could get an idea of court procedures and evidence.

A proper course given in the proper spirit would do marvels in overcoming the fear of the average medical graduate for courts and legal people.

As each department would be called upon to teach or decide on a point only infrequently, no great burden would be placed on any department.

The cost to the university would be very small until the work became so onerous as to crowd the department in which the institute was domiciled, but by that time interest probably would have been aroused sufficiently to insure the financing of a proper building.

This scheme, for what it is worth, is offered in an endeavor to fill a need in our medical school curriculum. It is very flexible and inexpensive to start. It requires a properly spirited man to head it. He must be willing to cooperate with various types of people and organizations. He must be willing to start at the bottom, and make sacrifice for the ends to be achieved.

University of California Medical School.

HEAD INJURIES—THEIR TREATMENT*

By EDMUND J. MORRISSEY, M. D.
San Francisco

DISCUSSION by E. B. Towne, M. D., San Francisco;
Mark Albert Glaser, M. D., Los Angeles.

THE treatment of head injuries will be limited in this paper to the immediate treatment, but in the short time allotted it will be possible to discuss only a few of the essential points.

In the treatment of head injuries it is most important to remember that we are chiefly concerned with the amount of cerebral contusion, that is, brain damage and not the fracture *per se*.

It is not uncommon to see patients who have long linear fractures in which there is little evidence of brain damage and, on the other hand, patients with severe cerebral contusion and with no demonstrable fracture.

ROENTGEN-RAY EXAMINATION

For this reason it is a mistake to order the average patient who has had severe intracranial trauma for x-ray examination because: first, these patients as a rule are suffering from shock; second, as stated before, we are interested in treating the brain damage and not the fracture, unless the fracture is depressed, in which case the diagnosis as a rule may be made without

x-rays; and third, if the patient presents evidence of intracranial hemorrhage the selection of the operative site will be determined from the clinical and not the x-ray findings.

From the foregoing the writer does not wish to convey the impression that x-rays of the skull are not necessary. On the contrary, they are very important as they help in the prognosis, are an added indication of the severity of the blow received, and occasionally show depressed fractures that cannot be found on clinical examination, and by means of a pineal shift one may diagnose an intracranial hemorrhage.

As regards the x-ray examination of head injuries the following conclusions may be drawn:

First: A certain small percentage of fractures cannot be shown by x-ray examination.

Second: One is not justified in making a diagnosis of no fracture of the skull from only one or two, or even three, x-ray views. To reach a proper conclusion it is necessary to have at least lateral plates of each side, frontal and occipital, preferably stereoscopic views. Even this is not sufficient, as the writer has had a series of cases in which only by taking mastoid plates was it possible to demonstrate fractures of the petrous portion of the temporal bone. In fact this has occurred with such relative frequency that at present mastoid plates are included in our routine examination of the skull in acute head injuries. This is especially true if there is a history of bleeding from the external auditory meatus.

Third: The extent of the fracture cannot be determined by x-ray examination. At either operation or postmortem examination that which often appears as a short linear fracture in the x-ray plate will be seen to extend a much greater distance.

Prognosis.—In fractures extending across the cribriform plate into ethmoid cells and associated with the escape of cerebrospinal fluid, the prognosis is poor. In fractures extending through the petrous portion of the temporal bone and resulting in bleeding or the discharge of cerebrospinal fluid from the external auditory meatus, the prognosis is fair.

The reason for the prognosis being so much worse in fractures through the cribriform plate and ethmoid cells is due to the presence of pathological organisms in the sinuses and nasal cavities, which either by direct extension or especially by the explosive force of coughing or sneezing enter the subarachnoid spaces and so causing a meningitis or cerebral abscess.

For this very reason irrigation or spraying of these cavities in the presence of cerebrospinal fluid drainage is extremely dangerous and should not be done.

INTRACRANIAL PRESSURE

The major problem in the care of head injuries after recovery from shock is the treatment of increased intracranial pressure.

As a rule two conditions contribute to this increased intracranial pressure:

First: Brain edema, which is the cause in at least 90 per cent of the cases.

* Read before the Industrial Medicine and Surgery Section of the California Medical Association at the fifty-ninth annual session at Del Monte, April 28 to May 1, 1930.

Second: Brain displacement due to a large hemorrhage, either extradural or intradural, or both.

What is the cause of this first condition, namely, brain edema? There are several explanations. The one that appeals to me is that tissues deprived of oxygen take up fluids.

Now in acute intracranial injuries we have the rupture of many blood vessels of varying size and thromboses of others with the result that a considerable amount of brain tissue is deprived of oxygen. Hence the consequent brain edema which is often sufficient to cause increased intracranial pressure.

Physiology of Increased Intracranial Pressure. In order to treat head injuries properly the writer believes it is essential that the pathological physiology of cerebral compression be understood. This may be divided into four stages:

In the first stage, compensation takes place by some of the cerebrospinal fluid being forced out.

The second stage is ushered in by a further rise in pressure which causes a blanching of the veins and a blocking of the subarachnoid spaces. Here the symptoms are headache, restlessness, irritability, nausea and vomiting.

The third stage is characterized by a degree of pressure which results in medullary compression, thus depriving the circulatory centers (vagus and vasomotor) and respiratory center of their proper blood supply. The circulatory centers are thus stimulated, which results in a slowing of the pulse, a constriction of the splanchnic vessels and consequent rise in blood pressure. To sum up this third stage clinically, we have a slowing of the pulse followed by a rise in blood pressure and by slow stertorous respirations. All this is due to the response of the circulatory centers to the cerebral anemia.

The fourth stage is in evidence when the pressure is so great that it cannot be overcome, and circulatory failure ensues. This is characterized by fall in blood pressure, rapid thready pulse, deep stupor, and dilated pupils. I might add that in this terminal stage relief of pressure is of no avail.

From the foregoing it can be seen that we should watch every patient who has given a definite history of head injury for the following signs and symptoms: headache, irritability followed by stupor, nausea and vomiting, slowing of pulse and respirations, and rise in blood pressure or pulse pressure.

TREATMENT

The treatment of generalized increased intracranial pressure may be accomplished by either: (1) Hypertonic solutions. (2) Spinal puncture with drainage. (3) Decompression.

Hypertonic Solutions.—The use of hypertonic solutions for the relief of increased intracranial pressure has been in use since Weed and McKibben in 1919 reported their experimental results with hypertonic and hypotonic solutions. The two solutions usually used are sodium chlorid and magnesium sulphate.

A hypertonic solution of sodium chlorid intravenously causes a rapid drop in cerebrospinal fluid pressure and brain volume, and is a fairly valuable adjunct. Nevertheless, it has its disadvantages because it is dangerous on account of its toxic effect and must be given slowly, and because there is a secondary wave of edema following its injection. This secondary wave is due to the cells' becoming hypertonic after fluid has been withdrawn, with the result that they again absorb fluid.

Hypertonic solutions of magnesium sulphate by bowel was advocated by Downman in 1922 and Fay in 1923 and 1924. Following the favorable reports of these men the writer tried it extensively when he was with C. C. Coleman, but not meeting with the same success he carried out various experiments, the results of which may be summed up as follows:

It appears that the brain tissue is subject to the same dehydrating effect of magnesium sulphate as the other tissues of the body and that cerebral dehydration is accomplished slowly and to a slight degree, but the effect of this drug is inadequate and should not be relied upon for the reduction of acute intracranial pressure.

Of late the writer has been using a hypertonic solution of glucose intravenously (usually a 25 per cent solution) and finds that it is of marked value. It is useful not only for its dehydrating effect but also for its value as a food, which is rather essential in those patients who remain in a semiconscious state for several days.

The amount which was given varied from 250 to 500 cubic centimeters. The one thing essential to remember is that it should be given *very slowly*.

Spinal Puncture with Manometer Readings and Drainage.—With acute increased intracranial pressure without localizing signs, relief can be obtained early and safely by lumbar puncture and drainage. The relief obtained in this way prevents medullary compression, the symptoms usually indicating operation. Spinal puncture should always be done with a manometer attached, of either a mercury or a water type. The routine to follow, if the pressure is over 10 centimeters of water, is to withdraw sufficient to reduce it to this level.

The danger attached to spinal puncture in acute pressure is practically nil. I have never seen a death in over four hundred cases. Of course in chronic increased pressure I am greatly opposed to spinal puncture. Schoenbeck, in a review of deaths following lumbar drainage, collected seventy-one cases, and in sixty-seven found, by autopsy, tumors or other chronic brain conditions. The accidents are due to pressure on the medulla by the walls of the foramen magnum or occasionally to hemorrhage into the tumors because of sudden release of tension on the vessels.

The reason that spinal drainage is so advantageous is due to the fact that the lateral ventricles normally contain about 30 cubic centimeters of fluid, the cisterns 60 cubic centimeters, and

30 to 60 cubic centimeters are contained in the spinal portion. Thus 120 to 150 cubic centimeters is taken up by fluid, part of which may be removed.

Subtemporal Decompression.—Subtemporal decompression should be used in those patients who present evidence of localized brain lesion caused by hemorrhage and in those patients who are not relieved by spinal drainage or in which, in spite of repeated spinal drainage, the pressure remains up for several days.

Of equal importance with the observation for signs of increasing intracranial pressure is the frequent neurological examination of the patient. It is only by this means that one is able to distinguish between localized laceration or contusion of the brain and extradural hemorrhage. Extradural hemorrhage occurred in less than five per cent of my cases, yet the diagnosis is extremely important, as it is one of the few conditions occurring in head injuries in which immediate operation is the only treatment. The prognosis is very favorable provided the diagnosis has been made and patient operated.

The typical picture of middle meningeal hemorrhage, which forms over 90 per cent of the extradural hemorrhages, is: first, an initial period of unconsciousness due to the cerebral contusion following the blow; second, a lucid interval followed by slowly oncoming stupor with signs of generalized pressure and localizing signs manifested by gradual progressing weakness of the muscles of the face, arm and leg of opposite side and, as a rule, dilatation of the pupil on the same side as the hemorrhage.

However, if we wait for this typical picture we are going to overlook many cases of extradural hemorrhage that might have been saved by surgery. LeCount, following autopsies in five hundred cases of deaths following head injuries, states that over 25 per cent of the extradural hemorrhages are overlooked. For example, if the head injury is severe we may have no lucid interval on account of the overlapping of the initial period of unconsciousness due to the contusion and the unconsciousness, the result of pressure from a large cerebral hemorrhage.

The time element is all important, that is, whether the neurological examination shows a progressive lesion. If the muscle weakness or paralysis appears coincident with the blow and remains practically the same, then we have localized cerebral contusion, and operation as a rule does more harm than good. On the other hand, if the examination shows a progressing lesion, then we are fairly certain of an extradural hemorrhage, and in these cases immediate operation is imperative. It must be remembered that it requires a definite time for sufficient hemorrhage to occur from a torn middle meningeal artery to produce symptoms.

SUMMARY

1. The treatment of patients with mild cerebral contusion with or without fracture is: absolute rest in bed; careful observation for two or

three days; ice cap to head; soft diet; freedom from cerebral stimulants such as tea, coffee, and alcohol; and small doses of some nerve sedative such as luminal or bromids. The prognosis in these cases is very good and as a rule the patients show none of the usual post-traumatic symptoms.

2. The more severe cases of severe cerebral contusion are to be treated for shock, if present, with maintenance of careful observation for signs of increasing intracranial pressure as shown by slowing of pulse and respirations and increase in blood pressure or pulse pressure. If there is any evidence of increased intracranial pressure, spinal drainage should be performed, with the patient in the horizontal position. This should result in relief of pressure symptoms. If signs of pressure again manifest themselves, spinal drainage should be repeated. If it is found that the pressure cannot be controlled by spinal drainage, then a subtemporal decompression should be performed. In these patients the prognosis is fair. As a rule they present the usual post-traumatic head symptoms such as headache, dizziness, irritability, and nervousness, for a period lasting three to twelve months following the injury.

3. A diagnosis of intracranial hemorrhage should be made in those patients who present signs of increasing intracranial pressure and in whom the neurological examination reveals a progressing lesion. Especially is this true if there is a history of a period during which the patient was free from symptoms following the head injury. These patients should be operated without delay. If operated in time the prognosis is good.

4. Operation is futile in those patients in whom symptoms and signs of great cerebral contusion are present, as evidenced by: first, high temperature; second, bloody cerebrospinal fluid; and third, early evidence of medullary failure.

5. Depressed fractures should be elevated as early as the condition of the patient will permit and devitalized brain tissue should be removed.

Finally, every patient with a history of unconsciousness following a head injury should be kept in bed at absolute rest for at least four weeks, then allowed up only if all symptoms such as headache and dizziness have disappeared. Should any of the symptoms return when patient is ambulatory, absolute bed rest is again indicated.

Adherence to the above procedures will greatly reduce the incidence of post-traumatic head symptoms. The prevention of the disabling sequelae should be one of the chief aims in the treatment of all head injuries.

234 Medical Building.

DISCUSSION

E. B. TOWNE, M. D. (350 Post Street, San Francisco).—It is impossible to discuss more than a few points in Doctor Morrissey's concise and comprehensive presentation of this subject.

He recommends the intravenous use of 25 per cent glucose in amounts varying from 250 to 500 cubic centimeters. I agree that glucose is by far the best hypertonic solution, but prefer a 50 per cent solution. On several occasions patients who have not responded to the weaker solution have shown prompt improvement following the use of 75 to 100 cubic centimeters of the stronger.

I am in complete agreement as to the desirability of spinal puncture in these cases, both for prognosis and treatment. My conception of the physiology and pathology of increased spinal fluid pressure is as follows: The cerebrospinal fluid has a circulation of its own. It is secreted by the choroid plexi of the ventricles, passes out of the ventricular system into the subarachnoid space and is absorbed back into the venous system mainly through the pacchionian granulations near the sagittal sinus. With edema, due to lacerated brain, there is an increase in the bulk of the brain tissue and this interferes with the circulation of the fluid, but secretion goes on without interruption. Therefore there is an increased amount of cerebrospinal fluid in the subarachnoid spaces, and drainage relieves this situation. Sometimes there are lacerations of the arachnoid membrane, so that the fluid gets into the subdural space, where no fluid belongs, and it is in these cases that spinal puncture gives a temporary favorable result with rather early recurrence of the symptoms of pressure. This condition calls for drainage by way of a subtemporal craniotomy.

Operation, aside from the elevation of depressed fractures, is indicated for the condition just described, for intracranial hemorrhage, and in certain cases showing evidences of localized brain injury in which the history is so deficient that it is impossible to be sure whether the signs, a partial hemiplegia, for example, came on immediately after the injury or some hours later. In the first case the pathology is localized laceration of the brain, and in the second it is probably hemorrhage. I do not hesitate to explore in such a situation, as a negative exploration is entirely harmless and one cannot afford to run any risk of overlooking a middle meningeal hemorrhage. Operative procedures are, therefore, designed to remove something, either trapped cerebrospinal fluid or blood-clot, and to afford drainage. Doctor Naffziger called attention to this fact years ago. I object to the word "decompression" as applied to these operations, for it intimates that a defect is being made in the skull and dura to relieve increased intracranial pressure, and it is my experience that such decompressions are worthless in the treatment of injuries of the brain.

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MARK ALBERT GLASER, M. D. (1118 Roosevelt Building, Los Angeles).—Doctor Morrissey has given us an excellent résumé for the treatment of head injuries. Brain injury in the majority of the cases is far more important than skull damage. Nevertheless, when the skull fracture involves the orbit, cribriform plate, frontal sinus, mastoid, petrous portion of the temporal bone, or the foramen magnum certain sequelae may occur which require specific treatment. The patient with acute head injury is usually in shock and, as Doctor Morrissey has mentioned, shock treatment is far more essential than early x-rays.

Acute increased intracranial pressure arises from either brain edema or brain hemorrhage. These we must differentiate. If brain hemorrhage is present and the symptoms increase, operative intervention is necessary. If the symptomatology is caused by generalized brain edema, dehydration methods are instituted. It is extremely important to record blood pressures every twenty to thirty minutes, and pulse every ten to fifteen minutes for the first twenty-four to thirty-six hours. It has been my custom in acute head injuries to use 50 cubic centimeters of 50 per cent glucose intravenously every four to six hours, depending upon the symptomatology of the patient. In addition, I have found it quite advantageous to reduce the fluid intake to 600 cubic centimeters. This reduction of fluid intake may be safely carried out for two to three days—the usual length of the critical period. Magnesium sulphate retention enemas may also be used in conjunction with the above dehydration methods. By following this scheme, I have rarely carried out a subtemporal decompression and have reduced the use of spinal puncture to a minimum. Some neurological surgeons feel that bloody

spinal fluid should be drained to prevent blockage of the subarachnoid space. In my experience, cases do well without this form of therapy. I do not carry out routine spinal puncture, but utilize it only when other methods of dehydration fail.

If a subtemporal decompression is carried out for acute brain edema, it is important to place a rubber drain in the subarachnoid space so as to permit drainage of the cerebrospinal fluid. The amount of fluid lost by drainage is far more efficacious than the small space increase afforded by a decompression.

Patients receiving a severe cerebral concussion form the greatest percentage of head injuries. These patients, in addition to being the most frequent, present the greatest number of symptoms and prolong such symptoms as headaches, "giddiness," nervousness, irritability, and mental changes over longer periods of time. These patients are frequently considered malingers, whereas in reality their cerebral damage is extensive.

Cerebral concussion causes punctate hemorrhages within the brain substance which may later result in arachnoid adhesions or ventricular distortion. Many of these can be clearly demonstrated by encephalograms, or a vestibular examination. Rest, sedatives, or the injection of air are the therapeutic measures of choice. Improper treatment of these cases not only prolongs the disability, but aids greatly in establishing post-traumatic symptoms.

I find otoscopic examination more important than ophthalmoscopic examination. Of course, one would not look into an ear with free-flowing blood, but if blood is absent externally, the otoscope examination frequently reveals a few scales of dried blood with a ruptured tympanic membrane, or a bluish-green membrane discolored by hemorrhage posteriorly. This naturally would presuppose a basal skull fracture.

Vestibular examination is of great value. By means of these tests, the drainage of the eighth nerve can be determined as well as central brain damage.

The treatment of head injuries is complex. One could talk for hours without covering the entire subject, but I certainly wish to congratulate Doctor Morrissey upon the concise and practical presentation of his paper.

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DOCTOR MORRISSEY (Closing).—I wish to thank both Doctor Towne and Doctor Glaser for discussion of my paper, as in so doing they added important points that it was impossible for me to bring out in the time allotted.

NEPHROPTOSIS—ITS DIAGNOSIS AND TREATMENT*

By JAY J. CRANE, M. D.
Los Angeles

DISCUSSION by William E. Stevens, M. D., San Francisco; H. A. Rosenkranz, M. D., Los Angeles.

SINCE most of the surgery of today upon the genito-urinary tract is being done to relieve urinary stasis, the most common predisposing cause of urinary infection and kidney destruction, the writer wishes to demonstrate that abnormal renal mobility produces urinary stasis and that such a stasis can, in the majority of cases, only be relieved by renal suspension.

Because a few years ago overenthusiasm for the surgical procedure of kidney fixation was general and because suspensions were done on all provocations, with many failures, is not sufficient

* Read before the Urology Section of the California Medical Association at the fifty-ninth annual session at Del Monte, April 28 to May 1, 1930.

reason to condemn the operation today as a means of offering relief to those who suffer as a result of urinary stasis due to this cause. Especially is this true when we consider the improved urological instruments at our command at this time, which can be of aid in making our diagnosis. With our modern facilities we can accurately demonstrate floating kidneys as well as determine the nature of infection and the degree of kidney destruction. This information was not at the command of all surgeons a generation ago. Thus many an anchored kidney did not relieve the symptoms which were due to pathology located elsewhere. The operation, therefore, fell into disrepute only to be revived and used now in selected cases and not as a cure-all procedure. The writer believes the pendulum is swinging from the ultra-conservative surgeon who fails to provide any form of treatment for these patients to those who believe, as do most of the modern-day urologists, that renal destruction caused by abnormal kidney mobility often can be prevented by applying our present-day diagnostic methods and treatment. The writer is not advising that every floating kidney found be anchored. He is only asking that the patients in whom there is objective evidence of a lesion, the result of nephroptosis as told with the cystoscope and x-ray and whose pain is reproduced by pyelograms, be suspended surgically or treated palliatively to relieve the urinary stasis and the resultant symptoms. Therefore, in this paper I shall limit myself to acquired kidney displacements as found to be the cause of urinary stasis by the aid of the cystoscope and x-ray.

SYMPTOMS

To mention all of the various symptoms that have been attributed to renal mobility is beyond the scope of this paper. It is sufficient to say that the symptoms may or may not be directly referable to the kidney. Frequent attacks of cystitis, as the result of a primary kidney infection with pain of an aching character over the affected side, have been by far the most pronounced individual symptoms.

Gastro-intestinal symptoms such as indigestion, constipation and pain over the areas of the gall-bladder and appendix were frequently encountered in these patients. In fact, so marked were these symptoms in some cases that the patients had had one or more intra-abdominal operations without relief of the symptoms. Nervous symptoms from insanity requiring hospital confinement down to simple hysteria were noted in a few instances. The former usually were greatly improved when the kidney was held in place permanently.

Because there are many cases of renal mobility in which the kidneys cannot be palpated we have come to depend more upon the x-ray findings, with the patient in the erect position, and the kidney pelvis and ureter filled with an opaque solution, than we have on palpation to determine the exact location of the kidney. By this means we also have been able to determine the degrees of hydronephrosis present, since that complication is a major indication for suspending the

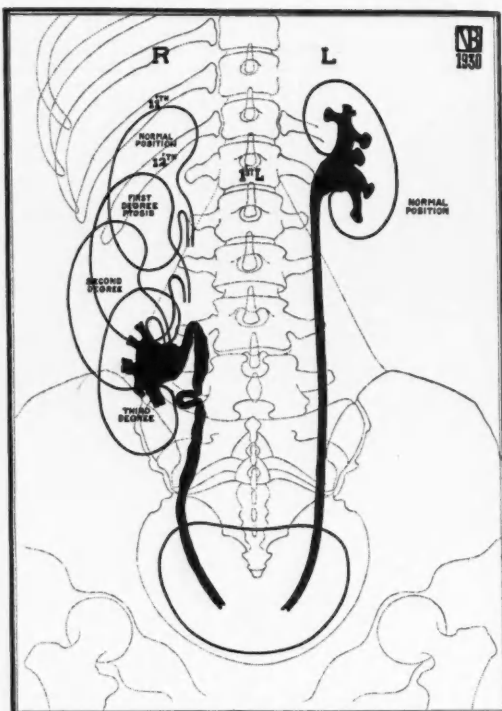


Fig. 1.—Schematic drawing showing the degrees of ptosis of the kidney.

kidney surgically. The schematic drawing shows the degrees of kidney mobility:

1. First degree when the pelvis rests opposite the third lumbar vertebra.
2. Second degree when the pelvis rests opposite the fourth lumbar vertebra.
3. Third degree when the pelvis rests opposite or below the fifth lumbar vertebra.

DIAGNOSIS

The diagnosis is made upon the subjective symptoms and the finding sometimes by palpation of a freely movable kidney, plus the objective evidence of pathology as demonstrated with the x-ray and cystoscope and the reproduction of the pain by injection of pyelographic fluid. It must be remembered in this connection that a floating kidney may also be tuberculous and for this reason careful urinalysis must be done on every case.

The roentgen ray and pyelograms will usually demonstrate calculi or newgrowths. Renal ectopia or the congenital condition, in which the kidney is held in an abnormal position by anomalous blood vessels, must not be confused with the acquired floating kidney because the ectopic kidney cannot be put into a normal position on account of its anomalous blood supply. To further rule out ectopic kidneys the routine prone and upright pyelograms will usually demonstrate whether or not the kidney will return to its normal position before treatment is introduced. Of course, gastro-

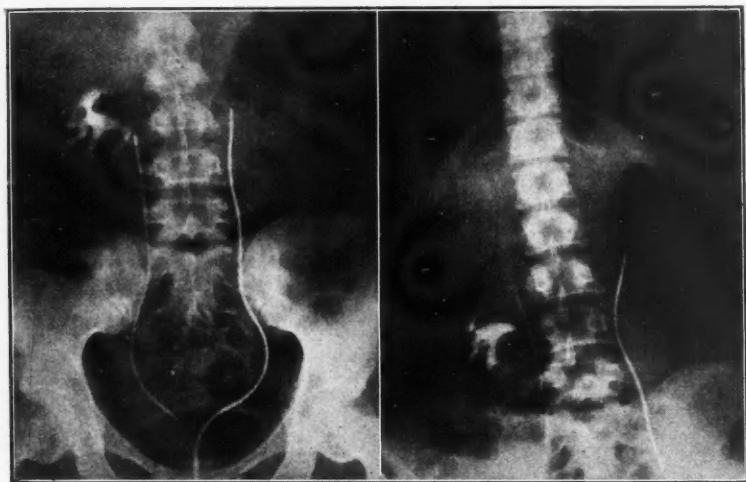


Fig. 2 (Case 4).—Third degree ptosis with twisting of ureter. Prone and standing positions.

intestinal pathology must be ruled out by routine studies. However, a motile kidney may exist in conjunction with gastric or duodenal ulcers as well as with any other pathological condition within the abdominal cavity. When such occurs it becomes necessary to determine which condition is responsible for the major symptoms. This latter can only be accomplished by the most careful, unbiased observation which includes a complete kidney study.

TREATMENT

The treatment consists of palliative and operative measures. The writer believes that all kidneys of a second and third degree ptosis should be surgically suspended, unless there is some contraindication which would prevent any semi-elective operation being done upon the patient, leaving the palliative treatment for the mild cases in which the abdominal supports completely relieve the symptoms.

On these points B. A. Thomas states:

"Palliative treatment is indicated in mild cases, particularly those associated with general visceroptosis, when, in a life of leisure, the subjective symptoms are relieved by rest or abdominal supports, when by periodic urologic check-ups there is no development or progression of hydronephrosis or infection; also in severe neurasthenia with no symptoms referable to the

kidneys, although Suckling and Billington have reported many cases of insanity cured by fixation.

"Palliative treatment is contraindicated: (1) when any subjective symptoms, even in the presence of general visceroptosis, are not completely relieved by supportive appliances; (2) when the threat of renal damage from urinary retention (hydronephrosis) and infection is uncontrolled by apparatus; (3) when severe pyelitis, pyelonephritis, pyonephrosis, calculus or tumor coexist; (4) when a rotation of the kidney, torsion of the pedicle or fixation of a kinked ureter is present; (5) when harmful traction is exerted on other organs, as on the stomach, intestines, and liver; (6) when the kidney is movable to more than the first degree; (7) when residence in a foreign or uncivilized country becomes obligatory; and (8) when the patient is a manual laborer or in indigent circumstances."

The surgical technique we have been using is that described by Kelly and Burnam. It consists of fixing the kidney by way of the lumbar route, well up under the twelfth rib by direct suture with No. 3 chromic catgut. The posterior kidney surface is likewise fixed to the lumbar muscles with the same suture material. Three sutures are usu-

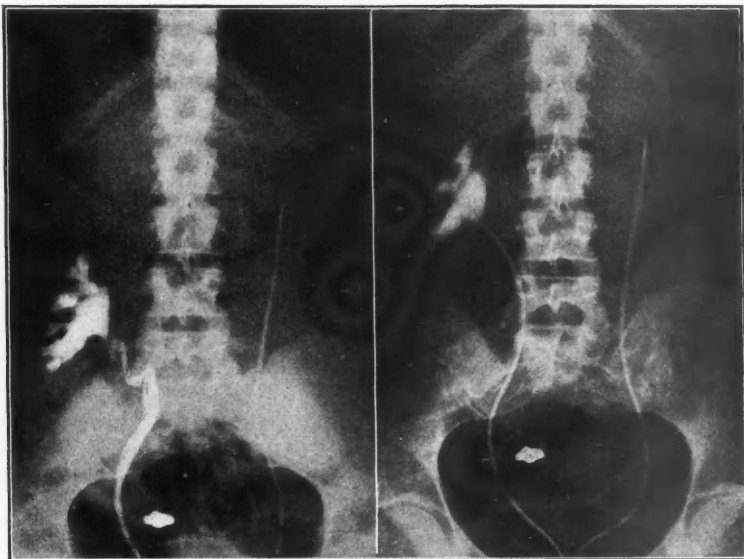


Fig. 3 (Case 28).—Third degree ptosis of the right kidney. Shown in prone and standing positions.

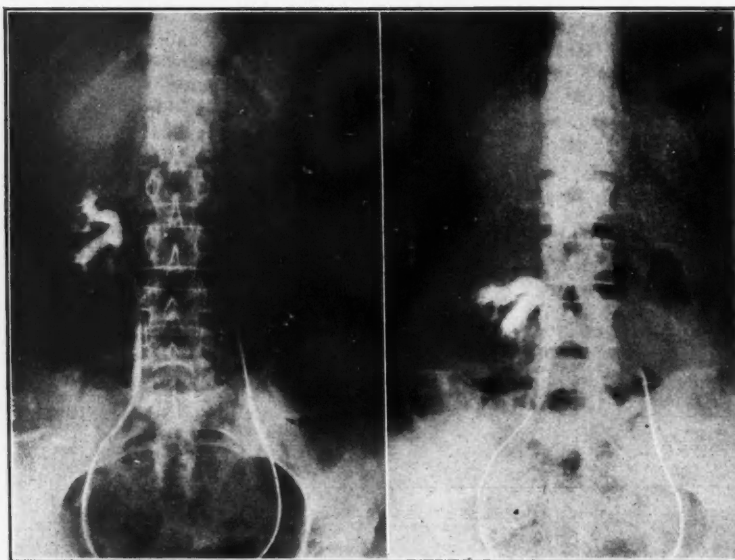


Fig. 4 (Case 41).—Right kidney easily palpable as a tumor mass in midline of abdomen. Also note low position of kidney in prone position.

ally employed between which the capsule of the kidney is split and stripped back for a short distance.

Westlake Professional Building.

DISCUSSION

WILLIAM E. STEVENS, M. D. (870 Market Street, San Francisco).—The fact is not generally recognized except by urologists that nephroptosis is a very common condition, especially in women. Subjective symptoms are not infrequently absent notwithstanding the presence of marked displacement of the kidneys and kinking of the ureters. The majority of patients, however, complain of pain and frequent urination. A review of eighty of our cases of nephroptosis showed that the number of patients complaining of pain in the upper or lower abdominal quadrant was about equal to those with pain in the lumbar region. Some of our patients had also undergone abdominal operations because of gastro-intestinal symptoms. Kinking of the ureter was found in 58 per cent of these eighty patients. It occurred on the right side in 70 per cent, on both sides in 20 per cent, and on the left side only in 10 per cent. Blood was found in the urine in 27 per cent. Nine per cent complained of gastro-intestinal symptoms.

Nephroptosis without a kinking of the ureter is sometimes responsible for pain and gastro-intestinal symptoms.

A correct method of examination is important in order to determine the presence of nephroptosis and ureteral kinks. If the symptoms are due to nephroptosis and ureteral kinks, the operative procedure indicated for their relief and, lastly, the probability of cure. After insertion of opaque ureteral catheters we usually obtain stereoscopic pictures with the patient in the flat position. Following injection of the kidneys stereoscopic pictures are taken with the patient in both flat and Trendelenburg positions. These films are then developed and if satisfactory the kidneys are again injected, the catheters withdrawn and pictures obtained with the patient in the upright position. It is a good plan to take the last picture ten minutes later in order to ascertain if the kidney pelvis have completely emptied. O'Connor has recently emphasized the importance of the emptying time of the pelvis as an indication of the type of procedure to be employed in the treatment of these cases.

I do not believe that faulty operative technique or the selection of improper cases were the only causes for failure to relieve symptoms, with consequent abandonment of nephropexy after its former period of popularity. Many skilled operators failed to obtain satisfactory results in patients who were apparently ideal for this operation. Vermooten has recently suggested that obstruction in the lower portion of the ureter may be present in some cases. He calls attention to the fact that the latter condition will produce elongation, tortuosity and kinking of the ureter and consequent hydronephrosis.

Doctor Crane is to be congratulated on his excellent results and I agree with him that nephropexy, together with whatever additional operative procedures may be necessary to remove obstructions and straighten out the ureters

regardless of location, is indicated in all properly selected cases.

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H. A. ROSENKRANZ, M. D. (1024 Story Building, Los Angeles).—I have followed with much interest at the Los Angeles County General Hospital the large series of nephropexies that Doctor Crane has performed and feel that he has done much to bring back to its proper place in the southland the operation of nephropexy and the allied procedures so aptly emphasized by Doctor Stevens. Doctor Mathé's excellent monographs on this subject during the past seven years are also to be commended for influencing the good resulting from this operation. Influenced by Israel of Berlin, who used to do only about three suspensions per year, I long ago adopted a conservative attitude toward this operation. Results obtained during the past few years have, however, shown me definitely that I have been too conservative.

As regards palliation in selected cases I may mention a physician with extreme third degree bilateral nephroptosis who has played golf regularly for four years with the aid of a suitable support.

I would like to emphasize the value of doing a suspension on almost all kidneys that are operated upon in which it has been necessary to so thoroughly free the organ that its natural supports have been severed.

THE INTERNAL RING IN OBLIQUE INGUINAL HERNIA*

By ALBERT R. DICKSON, M. D.
Los Angeles

DISCUSSION by W. S. Kiskadden, M. D., Los Angeles;
O. O. Witherbee, M. D., Los Angeles.

IT may seem to some that it is a waste of time to bring up for discussion a subject apparently so well settled and standardized as that of oblique inguinal hernia. The Bassini operation, or some modification, is apparently still the technique selected by the great majority of surgeons for repair of the inguinal canal. Of late the imbr-

* Read before the General Surgery Section of the California Medical Association at the fifty-ninth annual session at Del Monte, April 28 to May 1, 1930.

cation method of E. Willys Andrews is gaining an increasing number of followers. An apparently hopeless maze of modifications of these techniques is found in the literature, and is only matched by the immense number of techniques for aseptic intestinal resection. The answer to this all must be that the results of the operations now in general use are not satisfactory. It is safe to state that the percentage of recurrence is higher than we realize. Our recurrences do not come back to us and we develop an undue complacency in our results. That there is something wrong is very evident. There is a growing dissatisfaction with the old standardized methods. Is the answer to be found in new methods of repair or in the use of some new suture material, or what?

THE PROBLEM OF OBLIQUE INGUINAL HERNIA

I believe the solution has been reached for the oblique type of inguinal hernia by a small number of men whose work has not yet achieved general recognition. It is based as all surgery should be, upon sound anatomical reasoning, and I have attempted to sum up the important anatomical points as these men see them.

The inguinal canal consists briefly of two fascial layers which form the anterior and posterior walls, with the spermatic cord running obliquely through them, entering through the internal ring and leaving through the external ring. This canal normally should be long, small in diameter, and most important of all, oblique, with the internal ring fitting snugly about the cord. The situation is analogous to the manner in which the ureters enter the bladder. Any increase of intra-abdominal pressure closes the inguinal canal in a valve-like manner, similar to the way in which increase in the intravesical pressure closes the lower end of the ureters.

The obliquity of the canal and the closure of the internal ring is also aided by a very important structure, the internal oblique muscle. The lower fibers of this muscle have their origin from the outer half of Poupart's ligament, curve upward, inward, and downward to form the conjoined tendon. Contraction of these fibers tends to approximate the muscle edge and Poupart's ligament, and to reinforce the internal ring against internal pressure. This action has been likened to a camera shutter or an iris diaphragm, and is sphincter-like in action. In rodents the funicular process remains open, permitting the testicle to be drawn up into the abdominal cavity. Hernia formation is prevented in these animals by the contraction of this muscle.

Next, and the structure of greatest importance, is the internal ring, which is an opening in the transversalis, or in the later terminology, the transversus fascia. It is also called the endo-abdominal fascia and is the inguinal portion of the general enveloping fascia of the body, the integrity of which is universally recognized in every other location to be of the utmost importance in the prevention of hernia. Who would be so foolish as to attempt to close an umbilical or a postoperative ventral hernia by suturing the muscles and leaving this fascial layer unclosed?

This endo-abdominal or transversalis fascia is applied closely to the posterior surface of the internal oblique and transversalis muscles, forms the floor of the inguinal canal and passes below Poupart's ligament to form the anterior wall of the femoral canal and merges into the fascia lata of the thigh. It is thin where it forms the floor of the inguinal canal, but is much heavier beneath the muscles and often forms a heavy white fascial layer as distinct and strong as the shelving edge of Poupart's ligament. It can easily be identified by placing two or three fingers in the internal ring, the upper heavy edge of which is formed by the transversalis fascia. In some cases, unfortunately, this layer is more attenuated and difficult to find and this is likely to be true in the cases which need it most, namely, the very large and the direct hernias. It seems to me, then, that the rate of recurrence is in direct relation to the strength of this fascial layer.

What, then, is the picture in an indirect hernia? The canal is shortened, it loses its obliquity, and the internal ring is enlarged, the lower margin approaching to a greater or less degree the spine of the pubis. The sac or the unclosed funicular process must, of course, be present, but is of lesser importance. Eccles⁵ reports potential hernial sacs in 23 per cent of middle-aged cadavers examined. The incidence of hernia is very much smaller. Berger⁶ states that about one in sixteen born will acquire hernia. Why, then, do not a greater percentage of potential hernias develop? Without any question, as long as the internal ring remains intact hernia cannot develop. If the internal ring is congenitally deficient or becomes dilated, permitting a knuckle of bowel to enter it, it becomes further dilated by hydrostatic pressure, much in the same manner as the amniotic sac dilates the cervix in labor.

THE REPAIR OF AN OBLIQUE INGUINAL HERNIA

The repair, then, of an oblique inguinal hernia consists in the restoration of these various anatomical structures to their normal relationship. If the reasoning thus far is correct the solution to the problem is very obvious. First, the high ligation and removal of the sac; and I might state here that there is a report on record of two thousand cases of herniotomy in which removal of the sac was all that was done and the percentage of recurrences was lower than the average of the standard methods. In children, where the internal ring is not greatly stretched out, this might easily be all that is necessary. Second, closure of the internal ring which means approximation of the endo-abdominal or transversalis fascia snugly about the cord, suturing it to Poupart's ligament, which does away with the anatomical fault at its source.

Connell sums up the aim of repair thus: "Our aim in treatment should, therefore, be to imitate nature; remove the sac, and make the canal long, oblique, and small, with an active muscular check at the entrance."

This muscular check, then, is the third point and consists of leaving the internal oblique muscle

alone, so that it can contract actively and aid in maintaining the obliquity of the canal and the closure of the internal ring. This muscle should lie superficial to the cord and not be sutured beneath it, to avoid crippling its action. The function of the internal oblique muscle is destroyed by suture.

It is difficult to understand why such fundamental anatomical principles should have been so long ignored. Bassini evidently understood the principle, but wrongly applied the treatment and the great mass of surgeons have followed in his footsteps. The only great departure from Bassini's technique has been in the imbrication method of E. Willys Andrews. This method of closure attempts to do with the external oblique fascia what nature intended should be done by the deeper and better placed endo-abdominal fascia. If the crucial structure, the internal ring, is left open, it permits an entering wedge to separate the structures of the inguinal canal by hydrostatic pressure and can undo the most perfect reconstruction of the inguinal canal. A weak repair at the right place, the internal ring, will do the work much better than a far stronger repair superficial to this structure. This is proved by the highly satisfactory results that follow the placing of one or two sutures in the internal ring from the abdominal side when laparotomy is done for some other reason and a formal repair of the hernia is deemed inadvisable. I repaired last year a hernia that had recurred following a Bassini repair, in which the muscle had remained beautifully sutured to Poupart's ligament but in which the internal ring remained open, permitting the easy entrance of three fingers. The sac pushed out of this dilated ring and down and out beneath the muscle, causing the recurrence.

The importance of the internal ring is being recognized by an increasing number of surgical writers, among which are Pitzman,¹ Edmund Andrews,² Connell,³ Damon Pfeiffer,⁴ and others, but it is still far from attaining the attention the importance of the subject merits.

COMMENT

I have been following this technique since 1925; at first, reinforcing this endo-abdominal layer with the imbricated external oblique after the method of Andrews, but as my confidence has increased, I have trusted entirely to this one layer when strong, and the hernia not extremely large. Of late I have extended my confidence in this fascial layer, as has Edmund Andrews, to include repair of direct hernias, which are without doubt due to weakening and stretching of the transversalis fascia. More and more men are becoming convinced that direct recurrences which make up such a large percentage of recurrent hernias are due to suturing of the conjoined tendon which later pulls away from Poupart's ligament, leaving this region much weaker than before it was sutured. The transversalis fascia in this region can easily be drawn down from beneath the conjoined tendon and a strong fascial closure be made without tension. I have now quite a large series of cases, and while my follow-up records

are not complete, owing to the difficulty of tracing county hospital cases, I have known of no recurrence up to the present time that has recurred through the internal ring. I did have one patient in whom there was a small recurrent hernia that protruded out at the spine of the pubis and probably due to defective suturing at this point. In the repair of this recurrence I had the opportunity of feeling my repaired internal ring from the inside and was unable to indent even the tip of my finger into the internal ring. This greatly increased my confidence in this technique and I am optimistic enough to believe that it comes nearer to being the ideal hernia repair for the oblique type than anything thus far worked out.

TECHNIQUE

The technique in brief is as follows: Incision of the skin, splitting of the external oblique fascial roof of the canal, isolation of the sac, are performed as usual. The sac is opened and its contents returned to the abdomen and careful exploration is made for sliding hernias, direct sacs, etc. The internal oblique muscle is grasped with Allis forceps and retracted upward, permitting the white fascial layer of the transversalis, which is applied to the inner surface of the internal oblique muscle, to be recognized and grasped with Allis forceps. This layer is then sutured to the shelving edge of Poupart's ligament. Andrews places his sutures before the sac is removed so that a finger can be kept in the abdomen to facilitate the recognition of the correct layer and to prevent the needle from going too deep. Another way is to place Allis forceps on the transversalis fascia with a finger within the abdomen, then attend to the sac and suture the fascia later. I have never had any trouble in getting forceps on the right layer without a finger in the abdomen. The sac should be twisted into a cord, ligated as high as possible and allowed to retract without transplanting.

Care should be taken not to include muscle in the grasp of the sutures. The outer suture should be taken with the cord at right angles to the body and as snugly against it as possible. No suture is taken external to the cord. This leaves a resilient cushion for the cord and greatly lessens post-operative pain and pressure on the cord. Drop the cord back in, suture the cut edges of the external oblique fascia together and close the subcutaneous fascia and skin in the usual manner.

In large hernias or where the structures are thinned out, a valuable reinforcement can be made by doing the Andrews imbrication of the cord in addition to the suture of the endo-abdominal layer.

As a final note, I believe one should never transplant the cord out through all the structures to the subcutaneous fascia. This leaves a direct canal out to the surface and permits recurrence alongside the cord and is not infrequently seen following the repair of a direct hernia. It is best to put at least one fascial layer over the cord at the internal ring.

CONCLUSIONS

1. Indirect inguinal hernia is the result of:
(a) Preformed congenital sac, due to failure of

obliteration of the processus vaginalis. (b) Enlargement of the internal ring.

2. The internal ring is an opening through the endo-abdominal (transversalis) fascia.

3. Repair of oblique hernia consists of: high removal of the sac; closure of the internal ring by repair of the structure through which it is an opening, namely, the endo-abdominal fascia.

1401 South Hope Street.

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DISCUSSION

W. S. KISKADDEN, M. D. (1930 Wilshire Boulevard, Los Angeles).—Doctor Dickson has presented in a clear concise manner the salient points regarding hernioplasty, and his review of the anatomy is exact and pertinent. Doubtless all of us have adopted a technique which gives more or less good results, but often our technique may become routine and overlook a true anatomical reconstruction.

I am in accord that high ligation of the sac is important and all that may be necessary. However, one should always repair the internal ring. Often sutures placed after the method advanced by Connell are adequate. Routinely, however, the use of the transversalis fascia to reconstruct a new floor is logical and correct anatomically. Doctor Dickson has again pointed out the importance of this fascia and clearly outlined why the use of the internal oblique is to be discouraged.

I do not believe too much stress can be laid upon the fact that the canal is normally oblique and should regain this obliquity in the reconstruction. Reference to Connell's article will show excellent sagittal diagrams of the fascial and muscle layers and should create an indelible picture of the importance of the transversalis fascia and the internal ring.

Statistics vary from one per cent to ten per cent on recurrences following various procedures. Any technique, therefore, that offers the results that Doctor Dickson claims is worthy of careful study and consideration.



O. O. WITHERBEE, M. D. (1401 South Hope Street, Los Angeles).—I wish to compliment Doctor Dickson on the able presentation of his subject and also for the perseverance he has shown in building up his faith in the technique he has outlined.

It is difficult in discussing this subject to adhere closely to the points enumerated in the paper and to refrain from introducing and elaborating on such methods as the speaker may have devised in procedures of his own.

Doctor Dickson has laid special stress, and rightly, on the resistance offered by the transversalis fascia in the prevention of hernia. Its importance may be measured directly in proportion to the weakness or deficiency of the remaining layers of the abdominal wall. Nature, usually so lavish in other respects, has been extremely penurious in her supply of worthwhile tissue in the inguinal region. It is quite evident that man was not constructed for the upright position. All four-footed animals exhibit this same deficiency, their exemption from hernia depending on the fact that the horizontal position throws no direct and continuous strain on the inguinal structures.

Referring again to the transversalis, let me say that its competence depends immediately upon the support of the overlying structures, and if these are deficient the fascia must of necessity give way in time. In the vast majority of patients we observe the whole floor

of the inguinal canal greatly relaxed and often, in long-standing cases, so thinned out as to be apparently absent. This condition could never obtain if the muscular wall was complete and offering the same resistance it does in other localities. The arching fibers of the internal oblique, as they sweep from Poupart's ligament over to the edge of the rectus, should completely cover the internal ring, thus reinforcing the transversalis at this point.

It is surprising, however, to note the large number of cases in which this does not occur; in fact, this deficiency in the internal oblique is considered by many to be the most potent predisposing cause of inguinal hernia. If this be true, then it is quite evident that the reconstruction of this abdominal layer is most essential for successful repair.

As Doctor Dickson has so aptly emphasized the importance of fascial layers for unyielding support, so I wish to emphasize the necessity of fascial reconstruction when once the transversalis has been weakened or thinned out sufficiently to destroy its natural support. If the transversalis has not lost its integrity and can be rebuilt, then well and good, but we must remember that in absence of proper support from the internal oblique, it gave way once and may again. It is still possible, however, to build a fascial layer of unusual strength by bringing the edge of the rectus sheath across to the shelving portion of Poupart's ligament and then to reinforce this line of union by imbricating the edges of the external oblique. Transplanting the cord is by no means necessary when these structures are once secured in proper position.

Regarding the percentage of returns, I wish to say unhesitatingly that should the patient develop another inguinal hernia it will not be on the same side.



DOCTOR DICKSON (Closing).—I wish to thank Doctors Witherbee and Kiskadden for their frank discussions. I agree with Doctor Witherbee in the importance of strong muscle structures in the inguinal region. But that arching internal oblique muscle must be left free to contract. It must lie superficial to the internal ring as a reinforcing buttress. It must not be sutured about and beneath the cord where it cannot function, as in the Bassini operation; thus leaving a direct, short communication between the abdominal cavity and the superficial layers of the abdominal wall which is easily dilated again. A strong, snug, fascial closure at the internal ring about the cord must be made and should be made of the anatomical structure which normally belongs there.

BLADDER TUMORS—CLINICAL MANIFESTATIONS*

REPORT OF CASES

By LOUIS CLIVE JACOBS, M. D.

AND

ABELSON EPSTEEN, M. D.

San Francisco

DISCUSSION by Charles P. Mathé, M. D., San Francisco; J. C. Negley, M. D., Los Angeles; Wilbur B. Parker, M. D., Los Angeles.

MODERN writings on tumors of the bladder date from the introduction of the cystoscope into urology. Since then our knowledge has been materially increased by the addition of roentgenology. As a result of the world-wide studies which received an impetus through these mechanical aids, various classifications of bladder growths have been developed. Some of these are

*From the department of urology, Mount Zion Hospital, San Francisco.

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based upon histological findings; others upon cystoscopic appearances; others upon a combination of these two methods; and still others upon the site of the tumors in the bladder.

All tumors of the bladder are potentially malignant. From a classical standpoint, Young's biological grouping is ideal. Clinically, however, it is practically impossible to determine the degree of malignancy of any particular tumor. Ninety per cent of all bladder tumors are composed chiefly of epithelial cells; and of this group the papilloma predominates. They are often located directly upon the trigon; but usually posteriorly and to one side of the ureteral orifices. While the majority of bladder tumors are primary, nevertheless many are secondary to growths in adjoining organs. In the male the growth may be secondary to a prostatic or rectal malignancy, and in the female, secondary to uterine carcinoma. Again kidney or ureteral growths may metastasize to the bladder.

Our interest in this subject has recently been stimulated by the addition of surgical diathermy to the therapeutics of bladder tumors. We have, therefore, reviewed this thesis as evidenced by the records for the past six years of the department of urology, Mount Zion Hospital, San Francisco. We have concerned ourselves not only with the therapeutic aspects, but also with the diagnostic and roentgenographic features thereof.

DIAGNOSIS

In the diagnosis of tumors of the bladder, the symptomatology, laboratory findings, cystoscopic appearances, and other data, have been found quite in conformity with those given in the various textbooks and in the numerous papers written upon this subject. However, we find that the knowledge derived from cystography has not received the attention and importance that it really deserves. We have routinely made cystograms and, at times, stereoscopic ones, and feel that our knowledge of each particular case has been materially increased thereby. A cystogram shows the outline of the bladder that has been made opaque by distending it with a medium impermeable to the roentgen ray. We use a freshly prepared and sterilized 13 per cent sodium bromid solution which is injected into the bladder by means of a soft rubber catheter.

Cystography can never supersede cystoscopic inspection, but it can and should supplement it. Cystoscopic inspection is a direct visualization of the pathology, cystography is an indirect view; and direct ocularization is the highest type of clinical diagnosis. The cystogram should corroborate the cystoscope. In addition, it may give us data not obtainable by cystoscopy. In many patients, cystoscopy is impossible or unsatisfactory because of instrumental intolerance, profuse hemorrhage, size of tumor mass, vesical contraction or deformity, or extravescical pressure. In these instances, cystography may reveal to us the desired information as to the site and extent of the tumor mass, and may aid in the selection of the proper therapeutic procedure.

An irregular filling defect of the normally smooth vesical outline characterizes a neoplastic bladder. This defect is located at the site of the pathology and varies in direct proportion to the thickness and size of the growth. Just how large the neoplasm must be before it produces a cystographic deformity cannot be mathematically determined, but when it is of sufficient size to produce this finding, the treatment indicated is either surgical diathermy or resection.

The x-ray has likewise proved valuable in revealing conditions of ureteral reflux with secondary ascending kidney infections. Due to metastases, a change in the structure of the long bones may be detected. This will often be the first indication of a generalized carcinomatosis and is diagnostic of carcinoma of the prostate. The rationale of a routine complete general examination, including roentgenologic studies in every suspected malignancy of the bladder, with especial attention to both vaginal and rectal palpation, is evident. By so doing we often encounter a generalized carcinomatosis and refrain from futile bladder surgery.

MATERIAL FOR THIS STUDY

In our studies of tumors of the bladder for the past six years at Mount Zion Hospital we have reviewed fifty case histories. In these, cystograms were made of forty patients. Nineteen were positive, that is, the cystogram did not show a normal bladder. The majority revealed either a filling defect or an irregularity of the bladder wall. As regards the age, our youngest patient was twenty-nine and our oldest seventy-one years, the majority ranging from fifty-one to sixty-five years. As for sex, there were approximately three males to every female. The cystoscopic appearance varied from a small pedunculated papilloma to massive cauliflower growth, involving the major portion of the bladder wall; some of the growths almost entirely filled the bladder cavity. Only a very small percentage showed a single circumscribed growth upon the posterior wall. Eighteen of the fifty patients showed, cystoscopically, diffuse infiltration of the bladder wall. The ureteral orifices were involved in but two patients; in four others they were obscured by the massive size of the growths. In six of the patients, pain over the bladder was the predominating symptom. Hematuria was present in all but four. The majority of patients applied for relief because of either profuse hemorrhage or some disturbance in micturition. In one of the female patients the chief complaint was inability to void in the standing position. This was later explained by a large cauliflower growth which floated over the internal orifice when in the erect posture, producing an obstruction.

TREATMENT

The treatment used in these cases was fulguration; diathermy, both transurethral and suprapubic; radium; deep x-ray therapy; and resection. In the small tumor cases, where the patients tolerated repeated cystoscopy, the mass was destroyed

transurethral by means of the fulgurating electrode. The majority of these patients required from five to eight fulgurations, given at one to two weeks' intervals. No tumor was destroyed in less than three treatments. In five patients, following fulguration, radium seeds were implanted through the cystoscope. In eight patients, in whom it was more practical to open the bladder, we utilized surgical diathermy. In twenty-six patients transurethral fulguration alone was used. Deep x-ray therapy alone was used in but two patients; both old men that were practically moribund. However, at times, in other patients, roentgen-ray therapy was added to the treatment. Resection was attempted in five patients, with a mortality of 100 per cent, which is accountable by the fact that these were almost inoperative patients and all had extension of the carcinomatous process into the surrounding tissues. From our meager experience in the treatment of these patients we have come to the conclusion that resection should only be attempted in the advanced patients when one feels certain that there is but little involvement of the perivesical tissues. The small papillomata, regardless of how extensive the infiltration of the bladder wall appears, cystoscopically or roentgenologically, where possible, should be treated by continuous transurethral fulguration. One should not become discouraged if no marked improvement is noted following two or three applications, as sometimes it will require at least twelve different fulgurations to cause a disappearance of the tumor. Where a repetition of these treatments is impossible it is best to open the bladder suprapubically, remove the greater portion of the growth or growths by means of the hot cautery and then use surgical diathermy in the bladder wall, cooking it to the extreme degree. Often it is advantageous to immediately do a suprapubic operation, using surgical diathermy, and not procrastinate with transurethral fulguration. Radium and deep x-ray therapy have been used by us in some of our patients, but we have never been able to see any brilliant results therefrom.

In our series of fifty patients, we have definite proof of ten deaths within one year following treatment; two died in the second year following treatment, and four in the fourth year. Our statistics show that at the end of four years we have five patients alive and well and free from symptomatology. Of these five, four were treated by diathermy alone and one by diathermy with radium.

We also have a record of three patients treated in 1916 by transurethral fulguration; one of whom lived eight years, had a recurrence with metastases and died. The other two are still alive and well, though one had a recurrence three years ago and recurrences again one year ago. The third had no recurrences. Both of these patients were recystoscoped within the last sixty days and show no evidence of recurrence. The clinical aspect of the neoplasms in the three patients was, cystoscopically, identical and were unquestionably malignant.

Surgical Diathermy.—In our more recent patients we have utilized surgical diathermy in preference to other forms of treatment. In a perusal of the literature upon this subject, one finds strong advocates of radium, deep x-ray therapy, cautery knife, and resection in treatment of bladder neoplasms. Kolisher, Corbus, and O'Connor have been the pioneers in advocating the more extensive use of surgical diathermy in the treatment of these growths. At the present day the majority of urologists are treading in their footsteps. The consensus of opinion is that it is the treatment of choice.

Surgical diathermy is the newer method of utilization of electric coagulation of the tissues. It is accomplished by the direct application of the electrode of a high frequency, high amperage, and low voltage current to the tumor mass. By this means, an intense penetrating heat is generated within the tissues, resulting in their complete disintegration.

There are a number of reasons for the universal popularity of this method of therapeutics. Among the more important ones are: the possibility of destroying masses that cannot be removed by any other method; the minimizing of shock, incapacitation, length of time in the hospital; the lessening of the danger of metastases by the sealing of the blood vessels and lymphatics; and the checking of hemorrhage.

REPORT OF CASES

The following two cases are indicative of the work we are doing with surgical diathermy in tumors of the bladder:

CASE 1.—Mrs. A. H., age sixty-five, in whom an electrocardiographic examination shows "myocardial damage," came under observation on April 5, 1928. On cystoscopy, a "berry-like mass" was found posterior to the right ureteral orifice. The growth was twice fulgurated transurethral. However, it was quite too cumbersome for this method of therapy. We admitted her into the hospital, and under general anesthesia did a suprapubic cystotomy. With one of the disk electrodes, the diathermic current of about 1600 milliamperes was applied for four to five minutes. There was no after-pain whatever, and she made an uneventful and painless convalescence. A piece of tissue sent to the laboratory for examination showed "malignancy of the bladder." Her entire hospitalization was a period of sixteen days. Cystoscopic examination at the present time shows the mass entirely destroyed.

CASE 2.—Mrs. R. G., age forty-seven, who had had a hysterectomy in 1911, came under observation in October 1924, complaining of hematuria and burning on urination. Cystoscopic examination revealed a tumor of the bladder which was destroyed transurethral by means of the D'Arsonval fulgurating current. She disappeared until July 1928, at which time she presented herself with a history of hematuria of nine months' duration, and of frequency and pain of three months' duration. On examination a number of cauliflower masses were seen on the trigon and on the posterior aspect of the bladder, extending somewhat on the lateral walls. She was sent to the hospital, and the treatment was similar to that of Case 1. A piece of tissue was sent to the laboratory. The pathological report was: "Papillary epithelioma of the



Fig. 1 (Mr. J. G., age sixty).—Bladder markedly contracted and irregular in outline. Diagnosis: Carcinoma of the bladder. Treatment: Radium and deep x-ray therapy.



Fig. 2 (Mr. A. F., age fifty).—Slight irregularity about superior margin of bladder. Diagnosis: Papillary carcinoma of the bladder.

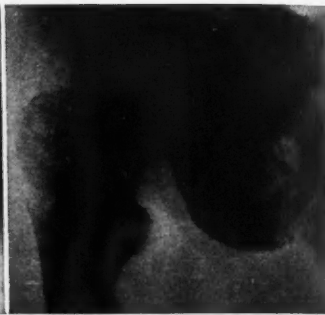


Fig. 3 (Mr. J. B., age fifty-six).—Metastases in femur and pelvis.

bladder." She remained in the hospital for a period of twenty-six days. On returning three days later, she had a contracted bladder. This was dilated. One week later cystoscopic examination revealed one small, reddish, tender area near the internal urethral orifice, which was transurethrally fulgurated. Since then her bladder has been cystoscopically negative and she has been free from symptoms.

Photo plates of a few of the more interesting and instructive conditions of this type which were under our observation are submitted.

450 Sutter Street,
870 Market Street.

DISCUSSION

CHARLES P. MATHÉ, M. D. (450 Sutter Street, San Francisco).—The high mortality of bladder cancer reported by Doctor Jacobs and Doctor Epstein is similar to that experienced by all urologists treating neoplasms of the bladder. This fact should be a plea for early diagnosis and prompt institution of treatment, and all patients giving the history of hematuria should be cystoscoped. Those presenting microscopic blood should also be examined. I have encountered a number of patients presenting small papillomata in whom the only sign indicating pathologic changes was the finding of microscopic blood cells in the urine in the course of a routine examination. This is particularly important because of the fact that the most common group of bladder tumors, the papillomata, begin as benign growths and later take on malignant properties.

Determination of malignant degeneration in a vesical neoplasm is often difficult because the piece that

is removed for diagnosis may not necessarily be from that portion of growth presenting malignancy. Also, the cystoscopic picture is sometimes misleading and cystography is of aid only when the tumor has attained relatively large proportions or has become adherent to the surrounding structures. In making a cystogram, the employment of air as a means of distending the bladder is very dangerous because of the possibility of an air embolus. The pressure employed in order to inflate the bladder can be sufficient to cause the air to enter the venous circulation, particularly when there is ulceration or necrosis of the tumor, and may lead to grave symptoms.

In treating bladder tumors one should not be guided by any given method of procedure. The size and position of the tumor, the ease of surgical approach, etc., are deciding factors. As Doctors Jacobs and Epstein have emphasized, fulguration is of great value. It is simple, efficacious, and can be repeatedly employed with little shock to the patient. If the growth is not too extensive, clean surgical resection is the best procedure. The tumor is dissected by employing the bistoury, or better, the cautery knife. I have a patient living nine years after surgical resection of a fairly large circumscribed necrotic carcinoma which was situated on the anterior bladder wall. Another patient is living, two years after removal by electrocautery of a necrotic carcinoma from the base of the bladder behind the trigone. Neither has presented any sign of a recurrence.

In operating on malignant tumors of the bladder one must be careful not to spread any of the cancer cells. This is accomplished by continually sponging the incision with sponges soaked with alcohol and by



Fig. 4 (Mrs. T. B., age forty-four).—Large smooth tumor in right pelvis, causing bladder pressure.

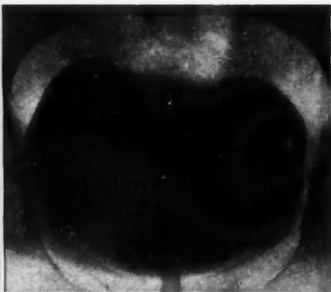


Fig. 5 (Mrs. F. S., age forty-five).—Irregularity of upper portion of the bladder. Diagnosis: Carcinoma of the bladder. Treatment: Transvesical diathermy and radium. No recurrence in three years. Capacity of bladder increased from two to eight ounces.

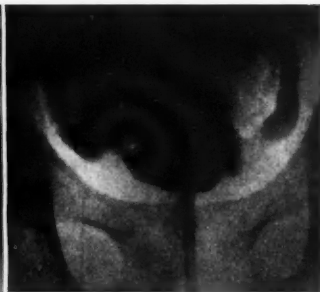


Fig. 6 (Mr. N., age forty-eight).—Contracted bladder with irregular outline. Ureteral reflux. Diagnosis: Tumor of bladder.

employing the cautery knife. It is well to examine the bladder periodically every two or three months in order to detect recurrence and to institute immediate treatment.

In patients in whom resection is difficult or impossible the use of diathermy, advocated by the authors, is ideal. In inoperable bladder carcinoma, diversion of the urinary stream by transplantation of the ureters into the skin of the lower abdomen, or into the large intestine, relieves inexpressible misery, alleviates symptoms, lessens invalidism, and prolongs life. It guarantees drainage of urine and enhances the employment of a destructive dose of radium or diathermy through the open bladder, deep x-ray therapy, or cystectomy.

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J. C. NEGLEY, M. D. (Brack Shops Building, Los Angeles).—Several statements by Doctors Jacobs and Epstein require special emphasis and attention:

First: It is clinically impossible to determine the degree of malignancy, but observers of wide and varied experience usually need only the confirmation of the laboratory to establish their cystoscopic diagnosis.

Second: Cystography has not received the attention it really deserves. Best results are obtained by a flat plate with bladder empty, then a plate with the bladder filled to comfortable capacity with any suitable opaque media. If further information is desired, the bladder may be filled with air and a third plate taken; air cystograms, however, are not without danger.

With all the plates at hand, we sometimes have findings as to size and site of tumor; also evidence of bladder fixation from extension to or from contiguous tissues.

Third: As our skill and improved equipment increases, tumors should be treated more and more by transurethral fulguration. Large size, many repeated fulgurations, degrees of malignancy, and extensive infiltrations do not deter us from using the above method now, as in the past. Personally, my preference is for this method, with deep x-ray before or after, or both.

Surgical diathermy through an open bladder must be resorted to when complications exist, such as extreme hemorrhage, with or without bladder full of clots, extreme pain, dysuria, frequency, bladder-neck obstruction, pyelitis, and pyonephrosis. Afterward the bladder should not be allowed to close until all sloughs have come away and until infection has been reduced totally, or to a minimum, and until the patient is in good physical condition. Accomplishment of these results requires three weeks at least, and preferably longer. Extension of malignant tumors from contiguous tissues into the bladder cannot correctly be classed as bladder tumors and, for obvious reasons, only those tumors having their primary origin or location in the bladder wall should be classed as bladder tumors.

A study of the current literature concerning bladder tumors should lead to the following conclusions:

1. No standard treatment has yet been established which is superior to all others.
2. Painstaking diagnosis, using all available methods with information so gained applied to each individual case, rather than following some personal preference, should be used in all cases.
3. Urologists should approach this problem with an open mind, without prejudice or bias, and a full consideration and tolerance toward the experiences of colleagues. Only then can a more nearly idealistic solution of this difficult and interesting situation be achieved.

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WILBUR B. PARKER, M. D. (527 West Seventh Street, Los Angeles).—Clinical manifestations of bladder tumors are best brought out through careful his-

tories, repeated urinalyses, and cystoscopic findings. The majority of urologists are handicapped by a previously attempted cystoscopic or biopsy diagnosis which may have resulted in a psychologic depression in an otherwise faithful patient. There are no patients in urology who are more submissive to treatment than the bladder-tumor patients, who can be treated as ambulatory patients.

I have never favored biopsies nor do I believe the supposition that it is within the scope of any man to accurately determine the degree of malignancy of any bladder neoplasm before complete examination of the specimen. It is a pleasure to report in this discussion a similar series as mentioned by the authors treated transurethrally, the patients being treated as ambulatory patients. The method used was persistent repeated thermocoagulations preceded and followed by deep x-ray therapy.

Only two of these patients succumbed within one year from carcinomatosis. The remainder of the patients are alive and well, though 15 per cent have had recurrences during the past five years which have been controlled in the same manner.

Of a similar series by open operations, five only have survived. The latter were of the type that an open operation was the last resort. They were extended every means of treatment recognized of value and as individually indicated.

The object of treatment is the complete and permanent destruction of tumor tissue. That is the ideal for which we strive. I have in my series of cases found that desiccation diathermy or, if you please, thermocoagulation through the cystoscope, combined with x-ray radiation, approaches this ideal nearer than any other method. I have found that an open operation is not necessary now where some years back it would have been my choice. This, of course, brings us back again to the matter of experience. And as it increases, so does my respect for thermocoagulation through the cystoscope plus x-ray. Likewise my pleasure in seeing many of my patients still reporting for observation five years after such procedure. But I bow humbly to the exception to the rule, which is the tumor, the therapeutic indications of which are open bladder surgery. Such usually mean much grief to both the doctor and his patient.

Several of the most extensively involved transurethral patients were members of the medical profession. One in particular presented a bladder with thirteen papillary carcinomata. Others of the laity presented low-grade malignant tumors the size of a man's fist. They are willing to be interviewed as to their present state of well-being after a period of more than four and one-half years.

Cystography, in reference to bladder tumors, seems to be a disappointment, except for confirmation to a certain degree of cystoscopic findings. I am unable, in contact with a number of southern California roentgenologists, to arrive at any other opinion. Surely, the roentgenologists are in a better position to interpret such findings more accurately than the average urologists.

The osseous structures of the pelvis and the unsatisfactory stereoscopic visualization of soft tissues in this area render further explanation unnecessary.

I wish to emphasize and compliment the authors of this paper on their treatment of bladder tumors. Individually extended experience and regular observation cystoscopies of these unfortunate patients will eventually standardize a modality code that will insure in general a more satisfactory percentage of cures.

Truly there is no greater mutable question in the field of urology than the successful control of vesical neoplasms. Location, degree of malignancy, and elapsed time to a great degree control the results in the hands of the most skillful urologist. Any deductions of value that one may make on the observations of the authors will rest alone upon past experience.

NONGONORRHEAL ENDOCERVICITIS AND VAGINITIS*

By DONALD A. DALLAS, M. D.
San Francisco

DISCUSSION by T. Floyd Bell, M. D., Oakland; Albert F. Pettit, M. D., San Francisco.

NONGONORRHEAL endocervicitis and vaginitis are diseases of great importance to any physician who assumes the responsibility of treating women patients. This applies not only to the gynecologist, but to the general practitioner and specialist also. The ophthalmologist and orthopedist must keep the cervix uteri in mind as a focus of infection in inflammatory diseases of the eye and joints. Endocervicitis and vaginitis are very common diseases and cause a great deal of illness and suffering among all ages and classes of women. Endocervicitis is more often encountered than vaginitis, and is a more important disease on account of its serious sequelae.

During the years 1925-1928 there were 3391 new patients examined in the Stanford University women's clinic. Of these, 1225, or 33.1 per cent, had an endocervicitis of sufficient severity to cause the attending gynecologists to record that diagnosis in the histories. In other words, one-third of all the women who came to our clinic for examination had a moderately severe endocervicitis. This percentage is more striking when it is remembered that we do all of the female urology for the medical school.

PATHOLOGY

Chronic infections of the cervix act as foci of infection in exactly the same manner as do chronically inflamed tonsils, abscessed teeth, or chronic appendicitis. Benedict, von Lockum, and Nickel of the Mayo Clinic report inflammatory diseases of the eye as having been cured by treatment of the infected cervix and treatment with autogenous vaccines prepared from cervical cultures. Mary Moench reported a case of choroiditis which was cured by autogenous vaccine and amputation of the cervix. It is worthy of note that this patient had an intact hymen. All of the before-mentioned cases harbored hemolytic streptococci in the cervix.

Breuer made cultures from the cervixes of many women and found streptococci, staphylococci, *Bacillus coli*, gonococci, and *Bacillus welchii*. He believes that nephritis, endocarditis, neuritis, acute and chronic mono- and polyarthritis, and peptic ulcers are sometimes caused by foci of infection in the cervix.

Sterility in the female is undoubtedly often caused by chronic endocervicitis. The thick, tenacious mucus which fills the cervical canal probably mechanically prevents the spermatozoa from reaching the uterus. Often, too, the reaction of the cervical discharge is sufficiently acid to kill

the sperm. Many sterile patients become fertile after eradication of the chronic infection in the cervix.

Puerperal infections are frequently caused by bacteria which have been present in the cervix for months before delivery. The organism usually present is an anaerobic streptococcus, but, fortunately, of low virulence.

Carcinoma of the cervix is undoubtedly often caused by the long-continued irritation of its epithelial tissues by a chronic inflammatory process deep in the cervix. There have been reports in the literature of large series of cases of chronic endocervicitis treated by cautery and operation in which no cases of cancer are known to have developed. These reports point the way to the prevention of many cases of cancer of the cervix and it behooves us to treat thoroughly and conscientiously every badly infected cervix.

Endocervicitis is an inflammatory disease of the tissues surrounding the cervical canal. Little was known of the disease until recent years, and the discharge that is practically always present was thought to come from the endometrium. Chronic endometritis was a very common diagnosis, and the cervix was dilated and the uterine cavity curetted as a routine treatment. The material obtained at curettage was sometimes examined microscopically and the diagnosis confirmed, as the various stages in the cystic building up and breaking down of the endometrium were not known and the microscopic picture was interpreted as inflammation. The occasional cure obtained by dilatation and curettage was, in all probability, due to the better drainage of the cervix which resulted from the dilatation. In our clinic the diagnosis of chronic endometritis is almost unknown.

Most cases of endocervicitis of nongonorrheal etiology result from the invasion of the cervical tissues by pathogenic bacteria at the time of delivery, abortion, or instrumentation. Lacerations of the cervix during these procedures are responsible for most of the infections. The cervical glands are deep-branching types lined by a single layer of high columnar cells the nuclei of which are at the bases. Under the influence of inflammation set up by the invading bacteria they pour out increased quantities of mucus mixed with pus. Many of the glands become sealed off and form cysts which are frequently visible and palpable, and are known as Nabothian follicles. In many cases where the laceration has been fairly extensive, there is an actual eversion of the lining of the cervix. In other cases the normal squamous epithelium surrounding the external os is displaced by a single layer of high columnar cells which normally covers the cervical canal. This is known as an erosion. In neither case is there an actual ulcer present although the gross appearance suggests this.

TYPES OF ENDOCERVICITIS

The types of endocervicitis are hard to classify, but the cases can be divided clinically into five groups. Within these groups the severity of the

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infection, the amount of damage done to the tissue, and the symptoms will vary greatly. In a general way, however, the classification is satisfactory.

Class 1.—Endocervicitis in the virgin. This class contains the smallest number of cases and is not at all common. There is often an associated retroversion of the uterus causing pelvic congestion, with symptoms of backache and pelvic pain. The discharge is generally clear mucus and not irritating. The best treatment is cauterization of the cervical canal with the small nasal tip. This is best done under anesthesia.

Class 2.—Endocervicitis in the nullipara. This class is a fairly large one and the cervicitis is, in a large percentage of cases, initiated by the gonococcus. This organism, however, often dies out, leaving secondary invaders present which continue the process. The cervical discharge is often profuse and somewhat irritating to the vulva and perineum, clear to yellow in color. There is generally an erosion of the cervix present. Occasionally there is involvement of the tubes and parametrium.

The treatment in this class depends somewhat upon the extent of the disease. In the mild cases, local applications of silver nitrate, 20 per cent, to the cervical canal and an astringent douche is all that is necessary. The more severe cases require cauterization with the electrocautery and, occasionally, operation. These procedures will be described later.

Class 3.—Endocervicitis in the postpartum patient. This class is, of course, a large one as practically every cervix that has been dilated has sustained at least small lacerations. At this time the endocervicitis is usually a mild one. There is often a retroversion of the uterus present with slight subinvolution. Local applications of silver nitrate 20 per cent, replacement of the uterus and, if necessary, the fitting of a pessary to be worn for several weeks or months, is all the treatment necessary. Occasionally, cauterization of the cervix must be resorted to, the method depending upon the severity of the infection and the extent of the laceration present.

Class 4.—Endocervicitis in the woman several months or years after delivery or abortion. This class presents a fairly typical picture. The patient usually complains of a moderate vaginal discharge with associated symptoms of other pelvic disease, *i. e.*, backache, pain in lower abdomen, heaviness in the pelvis, etc. The cervix on palpation is somewhat larger than normal, it is rough and hard and contains a few Nabothian follicles. There is an erosion or eversion often present. The cervical canal is filled with a thick, stringy, tenacious, yellowish discharge.

Local applications of medicinal substances do not tend to cure the disease in this type. In our clinic cauterization is resorted to immediately if the inflammatory reaction present is not too acute. Operation is necessary in a few of these patients to effect a complete cure.

Class 5.—Endocervicitis many years after delivery or abortion, or after repeated deliveries or abortions.

The picture of the old chronic, deep-seated endocervicitis is a familiar one to every physician. The cervix is hypertrophied, studded throughout with Nabothian follicles, lacerated in one or more places with eversion of the canal mucous membrane or an extensive erosion. There is a moderate to profuse thick discharge filling the cervical canal and vagina. This is the so-called precancerous cervix. There is generally some relaxation of both vaginal walls with more or less cystocele and rectocele, often slight prolapse of the uterus.

The less damaged cervixes can be cured by deep cauterization of the canal and vaginal portions with the large cautery tip. The more severe cases must be operated upon. In the milder cases, if there is cystocele and rectocele present, operation is the procedure of choice.

TREATMENT

The treatment of chronic endocervicitis has never been and is not at present entirely satisfactory. The vaginal discharge in many patients persists in spite of our best efforts. The medicines used in the past are almost innumerable and the forms and methods of application are many. It was not until the introduction of cauterization of the cervix by Hunner in 1906 that the office treatment of the disease became a rational one. This method has been enthusiastically used by many men, including Dickinson, Halden, Mathews, and many others.

Five general modes of treatment are in wide, general use at the present time.

First Method.—The first and most widely used method is that of local applications of medicinal substances to the cervix. In the Stanford University women's clinic, the drugs available for local application to the cervix are limited practically to 10 and 20 per cent silver nitrate and 10 and 20 per cent mercurochrome with a glycerin and ichthyol mixture (equal parts) which is instilled into the vault of the vagina by means of a Triumph syringe and held in contact with the cervix by means of a lamb's wool tampon. These drugs are used in the clinic in mild cases of endocervicitis, most frequently in postpartum cases where there is a moderate discharge, small laceration of the cervix often with a small erosion about the external os. The cervical canal is freed of mucus and painted with 10 or 20 per cent silver nitrate. The lacerated edges of the cervix and the erosion are likewise painted and the patient is given a prescription for a mildly astringent douche to be taken daily. This often suffices to bring about a cure.

Second Method.—Actual cauterization of the cervix by means of the electrocautery is used in most of the more severe cases. Two types of cautery tips are used—the small wire nasal type and the larger heavy duty type. Some experience and judgment is required to determine the method

and the extent of the cauterization. In mild cases it is only necessary to cauterize the cervical canal with the nasal tip and the area of erosion in a radial fashion about the external os. The depth required in these cases rarely exceeds two millimeters. In the more severe cases and in those not cured by the nasal tip it is necessary to cauterize the cervical canal with the larger cautery tip. This can be done in the office by placing the cold tip well up in the cervical canal, against one or the other wall, and turning the current on slowly. When a groove of sufficient depth is burned the current is turned off and the tip removed and allowed to cool. It is then placed against the opposite wall and another groove burned. In this way four deep grooves (two to five millimeters in depth) can be burned in the cervical mucous membrane. The area of erosion or eversion is then cauterized radially with the small tip. A large part of the infected cervical tissue is destroyed, but sufficient is left for regeneration of the canal lining and I have never seen stenosis result.

It is occasionally necessary to hospitalize the patient, dilate the cervix with Hegar dilators and stripe the cervical mucous membrane deeply with the large tip. In this way from four to six deep stripes can be burned from the internal to the external os. Care is taken to burn out the lacerated corners. The results are usually excellent.

There are several contraindications to cauterization, the most important being acute inflammation (nervous patient, etc.).

After cauterization of the cervix the patient is warned that the discharge will be more profuse for several days. Saline douches are prescribed after three or four days, to be taken daily. The patients return to the clinic after one week and the cervix is inspected. Healing requires from two to four weeks.

Third Method.—The destruction of the diseased cervical tissue by means of high frequency current is advocated by many. However, deep sloughing and profuse hemorrhage are said to occur occasionally. Frank M. Ende describes a new instrument and means of calibrating each machine by a very simple method. I have had no experience with it.

Fourth Method.—Frank Helvestine advocates infiltration of the cervix with two per cent aqueous solution of mercurochrome. The cervix is pulled down with a tenaculum, painted with two per cent mercurochrome, and the canal freed of discharge. A two per cent solution of mercurochrome is injected into the tissue of the cervix at four points of the compass. The needle used is five-eighths inch, twenty-five gauge, which is inserted parallel to the canal. Just a few drops are injected at each point, the injection being continued as the needle is withdrawn. One-half to three-fourths of one cubic centimeter is injected at each treatment. The points between are injected at the next treatment. He claims that it is simple, effective and inexpensive, seven to nine treatments being required to effect a cure.

Fifth Method.—Radium in small doses was advocated by A. H. Curtis several years ago. This method is losing favor on account of our inability to predict the effect of even small doses on the ovaries. It is not always effective.

Operative Procedure.—In spite of all the before-mentioned methods of treating the infected cervix, a few must be operated upon to cure the disease. We have used, almost exclusively, the Sturmdorf technique because it removes infected cervical tissues and leaves a large part of the healthy muscle tissue intact. The disadvantages of high amputation (frequent and severe postoperative hemorrhage, sterility and subsequent abortion or premature labor) are largely avoided.

Mention should be made of the infected cervix which is left behind after supravaginal hysterectomy is done. We have found that surgical removal of this bothersome, dangerous, and useless organ is the most satisfactory treatment. This operation is done through the vagina and is a simple, rapid procedure in most cases.

TYPES OF VAGINITIS

There are several different types of vaginitis. The two types, aside from that caused by the gonococcus and senile vaginitis, that are frequently seen will be discussed here.

Type 1.—The first is that in which *Trichomonas vaginalis* is thought to be the etiological agent. Castellani states that, while there is some doubt as to whether the organism is pathogenic, it is significant that these organisms are much more frequently found in vaginitis cases. *Trichomonas vaginalis* is a flagellate, roughly pear-shaped and somewhat larger than a white blood cell. There are four flagella arising from the rounded end. There is an undulating membrane extending from one pole to the other along one side. The organism can be grown on artificial media through many generations. Dextrose broth with five per cent human blood serum is reported by Carl Davis as being an excellent medium. He found that linament of soft soap, diluted to 10 per cent strength, killed the organisms instantly, that 50 per cent glycerin caused immediate loss of motion, and that a compound solution of cresol (1-400) killed them immediately.

The vaginitis caused by, or at least associated with the presence of this organism in the vagina is a very intense one. The infected patient complains of a severe burning sensation in the vagina and vulva and the presence of a profuse irritating vaginal discharge. Examination shows the vulva and perineum to be reddened and edematous. The vagina is markedly inflamed, the walls often red and swollen. If rubbed lightly with gauze many small bleeding points can be seen. There is, as a rule, an associated cervicitis, but this is not a striking characteristic of the disease. The discharge is yellowish in color and filled with bubbles, giving it a frothy appearance, which is characteristic. Smears made from the discharge show large numbers of bacteria of various forms.

With practice, the *Trichomonas* can be recognized in the stained smear. They are more easily demonstrated by placing a drop of the discharge on a slide, adding a drop of warm normal salt solution, and examining under the high dry power. The moving flagella can be seen readily.

The results of treatment in some cases are spectacular. In our clinic we have adopted a modification of that proposed by Greenhill. The vagina is thoroughly scrubbed with soft soap, using a gauze sponge held between two fingers. This procedure must be carried out with gentleness, as the vagina is exquisitely tender. The vulva and perineum are then scrubbed in the same manner. A bivalve speculum is placed in the vagina and the walls dried with cotton sponges. They are then painted with one per cent solution of methylene blue and a tampon saturated in the dye is inserted. The patient is given a prescription for one-half per cent lactic acid douche to be used twice daily. Treatments are carried out every second or third day until relief is obtained.

Type 2.—The second type of vaginitis frequently seen is that caused by fungi. There are two distinct clinical forms of the disease. One is the membranous type and is characterized by a profuse, clear, very irritating discharge, and the presence of patches of white membrane on the vaginal walls and flakes of this membrane in the discharge. This is the so-called vaginal thrush. The second or purulent type is characterized by a profuse purulent yellowish discharge which resembles very much that of acute gonorrhea and is undoubtedly often mistaken for it.

The symptoms are the same in both forms and consist of marked burning and itching of the vulva, vagina, and perineum. On examination the vulva and perineum are inflamed and tender, and there are often areas of abrasion where the patient has scratched herself. The vaginal walls are markedly inflamed, red, edematous. The cervix is often involved in the process and is congested and swollen. This disease is frequently seen in pregnant women.

Castellani states that smears made from the discharge always show an extensive bacterial flora and the presence of round or oval bodies, usually described as yeast cells. The fungi can be grown on artificial media such as glucose-agar or maltose-agar plates and subcultured in pure form. They belong to the genus *Monilia* *persoon* 1797 of the class *Fungi imperfecti*.

The treatment of the condition is quite satisfactory except in patients who are pregnant. We have found that drying the vagina carefully and painting it thoroughly with Berwick's solution, is quite effective. Castellani recommends hot sodium bicarbonate douches followed by a weak tincture of iodine solution (tincture of iodine, one ounce to one pint of water). Ethel Heard reported three cases which responded promptly to one per cent gentian violet applications. She wisely advises against the use of tampons. A modification of the treatment is sometimes necessary on account of the vaginismus that is induced

by the severe inflammation. In these cases, instillation of mercurochrome, two per cent (Berwick's solution is too painful), into the vagina through a small male catheter will in a few days reduce the severity of the inflammation sufficiently to allow a more satisfactory method of treatment.

SUMMARY

1. The frequency, etiology, and sequelae of endocervicitis are discussed.
2. A clinical classification of nonspecific endocervicitis is given and appropriate methods of treatment indicated.
3. *Trichomonas vaginitis* with an effective method of treatment is discussed.
4. Mycotic vaginitis is described and its treatment indicated.

530 Medico-Dental Building.

DISCUSSION

T. FLOYD BELL, M.D. (400 Twenty-ninth Street, Oakland).—The type of vaginitis due to *Trichomonas vaginalis* needs emphasis, since it is becoming more important as a gynecologic condition; probably because it is recognized more often than formerly. While the type of discharge and symptoms are fairly typical, it must be differentiated from diseases of the cervix with leukorrhea. Many patients have had gynecologic operations with no relief, later to have the *Trichomonas* found and treatment instituted with complete relief. The diagnosis is easy if the possibility is kept in mind, as Doctor Dallas has pointed out. The examination of any patient with leukorrhea is not complete unless both fresh and stained smears are made. Many methods of treatment have been advocated. Since using 20 per cent mercurochrome I have had very much better results than formerly. A bivalve speculum is inserted and the vaginal secretions removed with cotton. The entire vagina is then painted liberally with 20 per cent mercurochrome, and 10 to 15 cubic centimeters of 20 per cent mercurochrome is left in the vault of the vagina and held there by tampons. These are removed the next day and a daily douche is taken. The patient is instructed to cleanse externally twice daily with tincture of green soap. Treatments should be given three times a week at first, gradually lengthening the interval till all symptoms are absent and smears are negative. Menstruation seems to favor the growth of the organisms, so treatment should be carried out during this period. Usually four to five weeks is sufficient time to clear up the infection.

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ALBERT V. PETTIT, M.D. (2000 Van Ness Avenue, San Francisco).—This paper by Doctor Dallas serves to bring to our attention a thing of great importance, and one which is rarely stressed—the causes and treatment of nonspecific vaginal discharges. The infective agents of nongonorrheal leukorrhea are fairly innocuous as regards general health, but the discharge itself gives rise to marked discomfort and offends the sense of cleanliness.

Nonspecific infections of the cervix have often, in the intact cervix, been gonorrheal at their inception; the streptococci have invaded the tissue prepared by the gonococcus. In the damaged cervix, and in lacerations due to ill-advised operative efforts or to the effects of pregnancy, the infection may be primarily streptococcal. Except in the case of gonorrhea, I have never seen distant symptoms of infection from the cervix as a focus.

The treatment of choice in chronic infections of the cervix is cauterization if future normal pregnancy and labor is hoped for. Circular amputation, using

the technique described by Sturmdorf, is excellent, but only to be applied to those patients where pregnancy is not expected.

Inflammation of such a large mucous membrane surface as the vagina gives very marked symptoms. The symptoms of dragging down, sensation of weight, or the feeling that the pelvic organs would fall out, often considered characteristic of pelvic relaxation, or of tumor, are in reality characteristic of distention of vein walls, whatever the cause. Inflammatory reaction of the vaginal walls give these symptoms in a marked degree, and to these symptoms are added those contributed by chemical irritants, burning, and itching.

In the vaginitis group, the two most important classes are the *Trichomonas* and the fungus classes. *Trichomonas* may be demonstrated in many patients where the characteristic signs and symptoms described by Doctor Dallas are absent. The great numbers of these protozoa found in the characteristic discharge, however, seem to point to them as a causative agent. The soap and various dyes seem to be the most effective agents, but the daily treatment continued throughout the menstrual period is most important.

The treatment of yeast infection of the vagina has been very unsatisfactory in my experience. The thick yellowish white blanket of mycelia covers the cervix and vagina more or less completely, causing considerable pain and burning over the mucous membrane of the vestibule and labia. Berwick's dye, painted liberally over the vaginal walls after removing as much of the mucous membrane as possible, gives temporary relief, and I have found it necessary to repeat this treatment as often as twice weekly through an entire gestation period. The condition has a marked tendency to spontaneously disappear a few weeks after parturition, only to reappear at subsequent pregnancy. I have not seen yeast invasion of the vagina giving symptoms in a nonpregnant patient.

PYLORECTOMY AND GASTROENTEROSTOMY —IN ONE OPERATION*

By ASA W. COLLINS, M. D.
San Francisco

DISCUSSION by Rodney A. Yoell, M. D., San Francisco;
Carl L. Hoag, M. D., San Francisco; James F. Percy,
M. D., Los Angeles.

A PARTIAL gastrectomy is indicated where there is obstruction of the pylorus due to definite pathologic lesions such as multiple ulcers in and about the pylorus, a large ulcer, a complicated one, a cancer, or a suspicion of cancer, and also where a previous gastroenterostomy has failed to relieve the symptoms. Within the last few years, many writers on this subject have apparently shown an ignorance of the fundamental physiology involved, since many of them are of the erroneous opinion that acid is secreted only in the pyloric portion of the stomach. However, a partial resection of the stomach does lessen the amount of acid secreted and probably prevents, in many cases, jejunal ulcers.

COMMENTS ON THE REPORTS IN THE LITERATURE

Inasmuch as Wilson and McCarthy have proved that 71 per cent of the cancers of the stomach which have been removed show evidence of pre-

vious ulceration, the writer believes that a surgeon should hesitate in doing a simple gastrojejunectomy and allowing an old ulcer of the stomach to remain.

As far as partial gastrectomy is concerned, ulcers of the stomach and duodenum in this paper will be considered under a single head, owing to their proximity, similarity, and interrelation. Although many times it is possible to determine whether the patient is suffering from an ulcer of the stomach or duodenum before the operation, the treatment is the same.

It is understood that all cases of gastroduodenal ulcers are not subjected to partial gastrectomy, as patients in early stages are often cured by medical treatment, with the hope that some change may be effected in the secretory activities. In simple duodenal ulceration of short duration a partial gastrectomy appears unnecessarily severe, inasmuch as a safe gastroenterostomy so frequently relieves the symptoms. This is not illogical, for the acid content of the stomach is not always high and may be sufficiently reduced by partial neutralization. However, when a test-meal reveals a high acid content, it is probably wise, even in these patients to do a partial gastrectomy and escape further ulceration; although Balfour, in an analysis of twenty-nine cases of recurrent ulcer following partial gastrectomy, is convinced that elimination of gastric acidity does not necessarily protect the patient against further ulceration.

N. C. Lake of London reports complete relief of symptoms in 95 per cent of partial gastrectomy patients compared to 50 per cent relief in simple gastroenterostomy patients although the mortality was higher in the partial gastrectomy patients.

L. R. Broster of London, in a follow-up of 121 partial gastrectomies, gives the following results: 30 per cent very good; 47 per cent good; 10 per cent very fair; 7.8 per cent fair; 5 per cent poor. In this series of patients, 80 per cent may be regarded as having been cured, 10 per cent as improved, and 12 per cent as having received no relief.

Tremont-Smith and McIver, in an analysis of 678 cases, give a mortality of 18.7 per cent which includes patients who underwent operations such as the Billroth I and II, Polya, Balfour and Moynihan I and II.

P. Bastianelli (Valdarna) believes his enthusiasm for resection is justified by the results in seventy-five patients in which series he had two deaths. Fifty-one of these patients had Billroth II operations; 80 per cent of the series were traced without a single recurrence.

HISTORY OF THE PYLORECTOMY OPERATION

The first pylorectomy was performed by Pean in 1879. Reports were made two years after by Billroth, and later by Wolfler, Kroenlein, Mikulicz, Czerny, Bull, Treves, Moynihan, Weir, Senn, and Meyer. The mortality during that period was obviously very high, about 50 per cent. William J. Mayo in 1898 reported three cases. In 1903 Kocher reported on seventy-five patients with a mortality of 29.3 per cent.

* Read before the General Surgery Section of the California Medical Association at the fifty-ninth annual session at Del Monte, April 28 to May 1, 1930.

In 1906 Moynihan characterized pylorectomy as "an operation of generous promise," and in the same year William Rodman advocated pylorectomy in gastric ulcer. He collected thirty-one cases from the records of Mayo, Robson, Park, Finney, and Rodman, and noted but one death.

Up until 1912 twenty-five patients upon whom pylorectomy operations had been done in the Mayo Clinic were living and well.

In 1926 H. Finsterer believed his mortality of 17.4 per cent could be greatly lowered if a better mechanical technique could be attained, as a number of patients showed a bursting of the duodenal stump and peritonitis.

H. J. Patterson has recently stated that the mortality in partial gastrectomy for ulcer is but little higher than gastroenterostomy, and the permanent results much better.

Last year Truesdale reported on forty patients, with a mortality of five per cent, thirty of these being operated by the Billroth II method, six by gastroduodenostomy, and four by the Polya method.

Recent conclusions at the Mayo Clinic are that cancer of the pyloric end of the stomach could be recognized sufficiently early to make radical operation possible in at least one-half of the patients; that the mortality is about 10 per cent dependent largely upon the grade of cases accepted for operation, the mortality being less than five per cent if the patient's condition be good; that there is a prospect of a five-year cure in about 25 per cent of the cases; that a three-year cure is possible in about 38 per cent of those patients who recover from the operation; and that comparatively few patients who recover from the excision fail to get more than one year of relief.

Kronlein and Mikulicz modified the Billroth method (II) in order to anastomose a long loop of jejunum directly to the cut end of the remaining portion of the stomach; Kronlein using the whole lumen of the cut end of the stomach for anastomosis with the long loop of jejunum; and Mikulicz closing the upper two-thirds of the stomach opening, and then performing a button anastomosis between the jejunal loop and the lower portion of the stomach opening.

Polya, after excising the involved portion of the stomach, sutured the margins of the lumen of the remaining end to a corresponding length of the antemesenteric aspect of a loop of jejunum, about six to twelve inches from the duodenojejunal junction.

Balfour, of the Mayo Clinic, modified the Polya technique by employing the antecolic route rather than the retrocolic route of gastrojejunostomy, using a loop of jejunum taken about fourteen inches from the plica duodenojejunalis, in spite of the objection, more or less substantiated, of the long-loop, antecolic route. According to Lewisohn, Balfour reports the following statistics of the results of different operative techniques at the Mayo Clinic: 318 patients operated upon by the Billroth method (II) with 13.2 per cent mortality; 104 patients by the Polya method with 14.4

per cent mortality; and 38 patients by the Balfour method with 5.2 per cent mortality.

Following partial gastrectomy, union of the cut proximal end of the duodenum with the remaining portion of the stomach is more physiologic, of course, than the anastomosis of the stomach remnant with any part of the jejunum. And in spite of the fact that Kocher, especially, has satisfactorily accomplished this after extensive mobilization of the duodenum by incision of the peritoneum over the right kidney. The extent of distance to be spanned is often so great after the removal of any considerable part of the stomach that the resultant tension upon the sutures of anastomosis is generally too great to be safe.

Surgeons who do a great deal of gastrointestinal surgery usually do not confine themselves to any particular operation when removing the pylorus, but resort to some form of either of the Billroth operations.

AUTHOR'S MODIFICATION OF DOYEN OPERATION

Doyen gives a good description of his operation in his book. He places one of his powerful clamps on the duodenum below the lesion, and another above on the stomach. Then removing them he encircles the crushed portion with a ligature, and after removing the section inverts the stump with a purse-string suture. The crushing of the stomach with powerful clamps, followed by ligation, is not to be commended. Instead of using clamps, I place a purse-string suture of No. 2 chromic catgut around the stomach above the lesion, and another to encircle the duodenum below the part to be removed, in like manner always taking care that the needle gets a good purchase in the submucous coat. Before excision, another purse-string suture of plain catgut is placed around the stomach, above the chromic suture, and again the same is made to pass around the duodenum below the chromic suture. The chromic sutures are now tied, wrapped around and tied again for greater safety. It is very important that the chromic ligature be drawn very tight. The portion between the two ligatures is now removed and the stumps cauterized with carbolic acid and alcohol. The stumps are now inverted and held inside by the drawing and tying of the plain catgut purse-string suture. Posterior gastroenterostomy is performed in the usual manner, all ligatures and sutures being of absorbable material. The illustrations presented can better describe the operation.

The technique is very simple and excludes any possibility of hemorrhage, leakage, or infection, and is a great time-saving procedure, which is of the very greatest importance in an operation of this magnitude. In the past fifteen years, I have performed this operation ninety-four times with the following results: by sex, 54 men, 40 women; by anatomical part, 65 duodenum, 29 stomach, as near as I could give it; by mortality, five deaths, 5.25 per cent mortality; by symptom results, 81, or 92.6 per cent of the patients have no symptoms and can take all kinds of food without restriction, but 7.4 per cent are not satisfactory due to some undetermined cause.

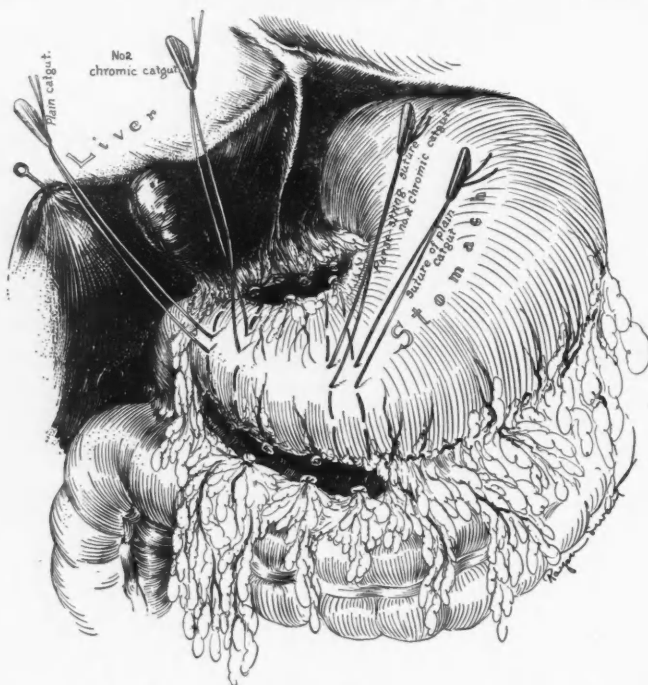


Fig. 1.—The distance between the chromic catgut tie and plain catgut purse-string suture requires a little judgment on the part of the surgeon. In this illustration the sutures seem almost too close together. The chromic ligature is tied very tightly, encircled again and tied a second time.

It is very difficult to keep a careful follow-up history of cases of this kind. For many of the first patients I can give only early results, as I have lost track of many of them, which I believe is true in practically all statistics. One could talk for hours on the comparative merits of the various methods devised for removal of the pyloric end of the stomach, but for rapidity, simplicity, and safety, the writer offers this method, which he considers a logical procedure.

Preoperative Treatment.—Symptoms due to a pathological lesion of the stomach or duodenum are usually of considerable duration before the surgeon is called to perform a radical operation, and the dyspeptic patient has undergone an intermittent period of suffering, necessarily denying himself the pleasure of eating the foods most enjoyable to all of us, and finally confining himself to a rigid diet which he himself has found most comfortable, or more commonly, to the strict diet and medication of the internist. Because of this training, the ordinary patient is quite well prepared for operation when entering the hospital. Alkal-

ization twenty-four hours before operation is essential. Three drams of bicarbonate of soda are given in divided doses. An enema should be given the night before and another the morning of the operation; and one-sixth grain morphin sulphate and 1/150 grain of atropin should be given one-half hour before taken to the surgery.

Postoperative Treatment.—

This has been quite well standardized. Immediately after the patient is placed in bed, 1000 cubic centimeters of a five per cent glucose and salt solution are administered subcutaneously by a two-way tube, one in each inner side of the thigh. One-sixth grain of morphin sulphate is given every four hours for from two to three days; and liquids are administered by mouth every two hours, beginning with the alkaline waters. Should vomiting occur, the stomach is lavaged; and on the night of the third day two ounces of milk of magnesia are administered, to be followed in the morning by the same dose.

After leaving the hospital the patient is cautioned to adhere very strictly to a prescribed diet. Although the diet is not of the

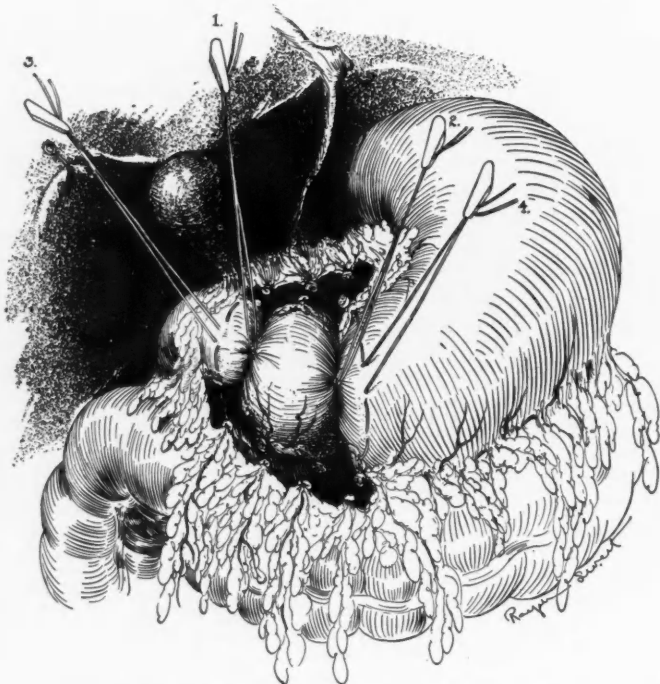


Fig. 2.—It is amazing how small a stump remains after tightly tying the chromic ligature. This ligature eliminates any possibility of hemorrhage or leakage.

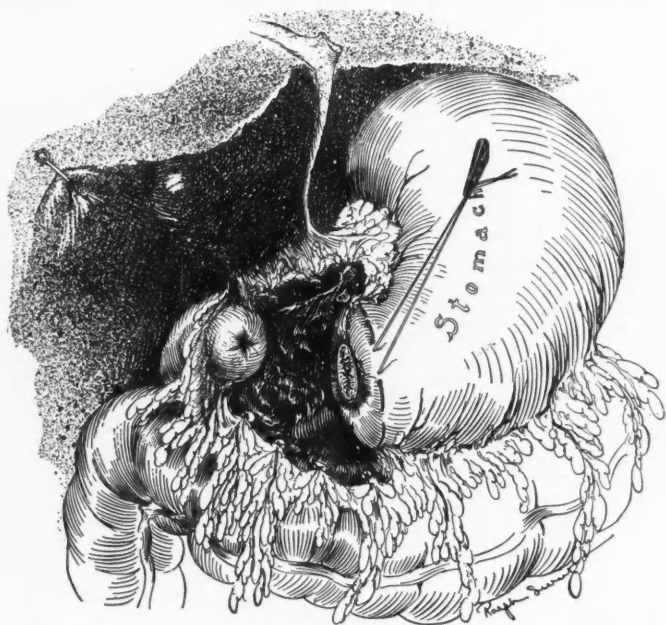


Fig. 3.—The duodenal stump has been inverted and the gastric stump is ready to be inverted and held in place with the plain catgut purse string. Do not remove too much mucous membrane from the stump.

Sippy type, it is, however, confined to soft food of a milk base and pureed vegetables.

It seems a pity that stomach patients must be punished beyond the diet. Although tobacco does not cause ulcer, it certainly has a tendency to increase gastric secretion and acidity. This has been positively proved and, sad as it may seem, tobacco cannot be permitted before operation, and must be restricted for some time after removal of the ulcer. Tobacco does not cause ulcer any more than alcohol, but certainly is a "bad actor" in gastric ulcer.

Grave danger can arise if alkalies are given to excess, definite symptomatic reactions corresponding with the changing chemistry of the blood even to the point of tetanic convulsions may be produced, unless the alkalies are reduced or stopped.

SUMMARY

1. Diet and the removal of occult foci of infection may cure peptic ulcers in early stages.

2. Gastroenterostomy has proved effective in mild cases of hyperacidity where medical care has failed.

3. Gross pathologic changes in or on either side of the pylorus must be removed by excision.

4. Cancer of the stomach is

more common than in any part of the body.

5. Ulcer of the pylorus usually precedes carcinoma.

6. Removal of the pylorus with part of the stomach and duodenum removes the seat of predilection to cancer.

7. Gastroenterostomy leaves two openings, one of which will cease to function.

8. Gastroenterostomy may produce a vicious circle and also make the patient more prone to jejunal ulcer.

9. Removal of ulcer and cancer-bearing area and gastroenterostomy at one operation is a rational and logical operation if the technique can be simplified to remove all danger of hemorrhage, leakage and prolonged complicated operative procedures.

10. The writer believes the technique here described is so simple, rapid and devoid of possible postoperative complications that the operation can be completed as a one-stage operation.

450 Sutter Street.

DISCUSSION

RODNEY A. YOELL, M.D. (490 Post Street, San Francisco).—One is struck, on reading the literature of gastric surgery, with the differing opinions of choice

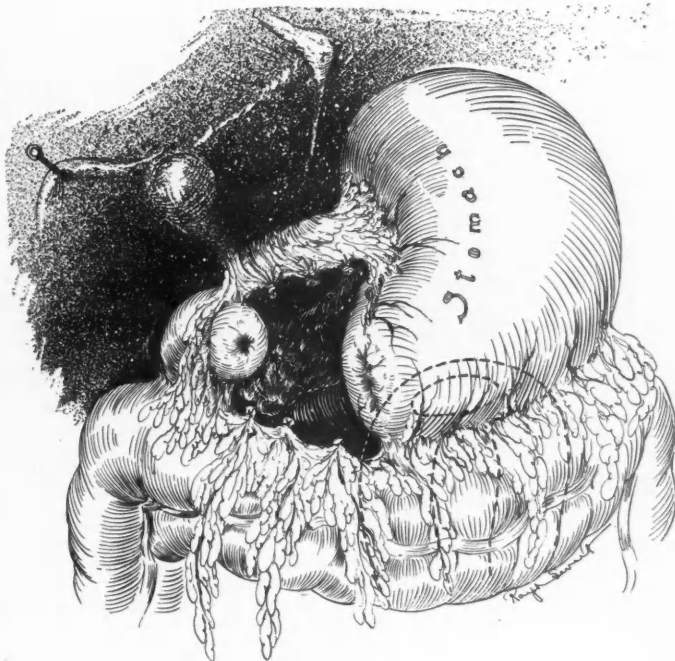


Fig. 4.—The operation of resection is completed and a posterior gastroenterostomy is done in the usual manner. A site on the jejunum, about eight inches from the ligament of Treitz, is selected for the gastroenterostomy. The stomach is not fixed and there is no interference with its mobility, which is of the greatest importance in maintaining normal function.

in the matter of operations and the various modifications of technique advocated, all designed to eradicate ulcer or cancer of that viscus.

The Billroth I and II, the Czerny-Mickulicz, Finsterer, Paen, posterior gastroenterostomy, the Balfour, Halstead and Finney, and finally the procedure of Devine represent but definite attempts to overcome the disadvantages of earlier operations and to achieve a more successful goal, namely, lowering of the mortality and eradication of the pathologic tissues.

One thing is striking, however, and that is the high mortality attendant on radical resection of the stomach, irrespective of the technique used. Another factor also worthy of note is the persistent effort by surgeons to achieve resection as being the ideal objective to be obtained in the treatment of ulcer. Less radical operations apparently do not give either the percentage nor the assurance of cures that resection vowsafes.

Certainly the operation of partial gastrectomy is most formidable and any procedure which will render the technique more simple, less traumatic, less time-consuming and more in line with normal anatomical architecture, is to be commended and welcomed.

The operation as advocated by Doctor Collins seems to me to present certain very definite advantages. First, it eliminates excessive clamping and crushing, with the attendant burying of devitalized tissue which must ultimately be absorbed. Second, it eliminates the utilization of extensive amounts of suture material, all of which constitutes a strain on the peritoneum's resistance, and by the same token cuts down the time and trauma coincident with long suture lines and cut edges. Third, the end result of his procedure is an anatomical stump of finished appearance and more like the normal stomach contour than by any other technique, and also exposes far less area which could become the focal point for adhesions. Fourth, the paucity of metal in the belly greatly facilitates the handling of tissues and organs and permits of better exposure and walling off of the operative field and greatly enhances the mobility of the stomach stump for the performance of the entero-anastomosis. Indeed it is far simpler to perform this step after the resection than as is often done before the cutting out is commenced.

When I first saw Doctor Collins perform the operation, I doubted the possibility of purse-stringing so large a mass as the stomach stump. But he accomplished it with most astonishing ease and speed, and I have seen him repeat the performance several times and have accomplished it myself without any difficulty whatsoever. Technically it is most easily performed.

In conclusion, I believe that the operation advocated marks a definite step in gastric surgery. It combines several advantages, dictated by theoretical technical considerations, and practically eliminates many factors which undoubtedly contribute to the high mortality of gastric resection and which hold back the more widespread employment of that most desirable operation.

✱

CARL L. HOAG, M. D. (384 Post Street, San Francisco).—The principle of the procedure which Doctor Collins suggests for gastric resection is well established. It is the present-day standard method of disposing of the appendix stump and is used frequently in closing the end of the bowel where lateral or end-to-side anastomosis is to be done. Tying a purse-string suture around any portion of the bowel serves to compress the peritoneum, submucosa, and mucosa into one mass and prevents retraction of either layer. It is the separation of these layers and the retraction of some of them with their accompanying blood vessels which permits hemorrhage, ulceration and leakage to occur. Crushing clamps serve the same purpose, but the purse-string suture has the distinct advantage of maintaining compression during the entire operation and for hours or days afterward. It requires, however, the optional use of a greater length of gut than a direct clamp and suture method. As a rule the stomach wall is quite thick and the cross-

section to be inverted is large, so that a considerable length of gut should be available just as it is necessary to use more of the cecum in inverting an indurated appendix stump than when the tissues are thin and pliable.

I congratulate Doctor Collins for bringing to us this new application and feel that it has a distinct advantage in the Billroth II operation if the resection does not involve too great a portion of the stomach.

✱

JAMES F. PERCY, M. D. (1030 South Alvarado Street, Los Angeles).—This short paper by Doctor Collins epitomizes the essential known facts relative to major surgical conditions in the pyloric area of the stomach. In addition, he has well described a most attractive technique for correcting them.

I am wondering, however, if he can always invert the walls of the stomach and duodenum as easily and as safely as he describes. If he can also do this without inverting too much of the stomach wall, leaving a bulky mass within its cavity, he has shown us, I repeat, what would appear to be not only a valuable but an ideal procedure as well.

In the after-treatment it is exceptional in my experience to need to give "one-sixth grain morphin sulphate every four hours for from two to three days" following an elective resection of the stomach unless I have failed to adequately protect the endothelial lining of the abdomen from pain-producing trauma. Too few of us, also, are aware of the dolor-relieving possibilities of one or two sterile hypodermics given impressively by the nurse or the physician. Patients are more comfortable and their normal physiology is reestablished much quicker when morphin can be dispensed with.

It is also a question whether the many rules commonly given patients relative to their postoperative diet following gastric surgery are necessary. Fluids in small quantities as soon as the patient requests them following recovery from the anesthetic rarely cause trouble.

The dietary regimen laid down by Doctor Collins for these patients while they are in the hospital is probably serviceable, but when mine leave the institution I only insist that they thoroughly masticate their food before swallowing it.

Last year one of my patients wrote me that he was enjoying a wineglass of Worcestershire sauce before each meal. This man had suffered from chronic starvation for many years incident to a large posterior, evidently subacute, pyloric ulcer. He was advised to discontinue this part of his diet.

THE LURE OF MEDICAL HISTORY

A TWELFTH-CENTURY TREATISE ON SURGERY*

By S. L. MILLARD ROSENBERG, Ph. D.
Los Angeles

THE library of Judge Alfred K. Nippert of Cincinnati contains a photostat copy of a very rare manuscript of a twelfth-century medical treatise on surgery which is of exceptional interest in the history of medicine. The manuscript

*This account by Professor Rosenberg of a twelfth century medical treatise by Bruno of Longoburgo is based on some notes made by the editor of California and Western Medicine during a visit to one of his friends in Cincinnati, Judge Alfred K. Nippert. Dr. Otto H. F. Vollbehr, who is mentioned therein as the donor, recently sold a collection of fifteenth century books to the United States Library of Congress for the sum of one million and a half dollars. That collection contains the famous Benedictine Monastery St. Paul (Carinthia, Austria), copy of the Gutenberg Bible, which is a forty-two line Bible, printed by Johann Gensfleisch zu Gutenberg himself, the world renowned German inventor of the art of printing.

concerns the celebrated Bruno of Longoburgo and his *Chirurgia Magna*, a work on major surgery.

The following is from an article in the Washington Post of November 8, 1929: "Through Judge Alfred K. Nippert of Cincinnati, a rare fourteenth century manuscript of the *Chirurgia Magna*, the thirteenth century work of Bruno of Longoburgo, was presented to the Library of Congress on October 31. It is a compilation of the medical knowledge of the thirteenth century. The interest of Dr. Otto H. F. Vollbehr of Berlin is responsible for the gift. He is the owner of a great collection of medieval manuscripts, and agreed to present Bruno's work if another donor would share the cost, as Judge Nippert has done. The gift comes at a time when an inventory is being made by Dr. J. F. Jameson of all classical and medieval manuscripts in the Library. It was also facilitated by a grant from the General Education Board."

The facts about Bruno and his celebrated book on surgery that are given below are partly quoted and partly paraphrased from a description issued by the Library of Congress:

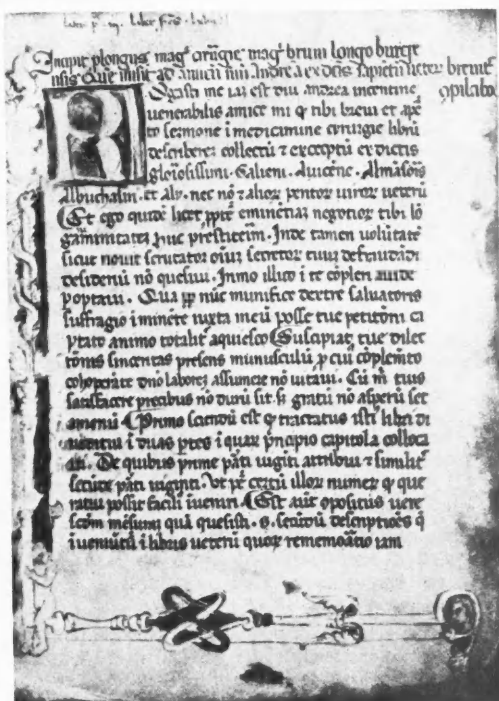
Bruno was the earliest of a remarkable school of North Italian surgeons of the thirteenth century. These men experimented with anesthetics, using opium and mandragora, and undoubtedly succeeded in producing insensibility to pain. Subsequent literature is full of references to these old surgeons who mercifully put their patients to sleep before they cut them.

All physicians of that time knew that an artery sent out redder blood than a vein and sent it by spurts, but Bruno and Lanfranchi are the first to mention a third form of bleeding, the capillary. Bruno and Guy de Chauliac are the first who speak of the two forms of the healing of wounds, by first or by second intention. Bruno insists that certain kinds of wounds must be left open till they heal, while others must be drawn together. To check bleeding he prefers styptic applications or searing with a hot iron, though he mentions the ligature.

With no knowledge whatever of the germ theory of disease, Bruno's insistence on cleanliness and care resembles modern asepsis. He especially warns against the use of water; all his treatment of cuts is dry. When some fluid seems necessary, as in pushing an intestine back into place, he advises the use of a clean cloth dipped in wine. Naturally the alcohol had a germicidal effect even though he did not know the theory.

There are three major divisions of medical treatment: diet, potions and surgery. Bruno in general opposes too free a use of surgery; it is a last resort after all other means have failed. Hence, like most of his contemporaries, Bruno advises against operating for cancer even when the growth could be entirely removed; he prefers blood-letting.

His ideas regarding stimulants are interesting. Surgeons must not be "vinolenti," habitual or excessive users of wine, though an occasional



Reproduction of the first page of the "Prologue" to the *Chirurgia* of Bruno de Longoburgo (A. D. 1252). For translation, see text.

glass may be allowed them. In operating they must combine the qualities of caution and boldness, and must be particularly careful when operating in dangerous places, as in the skull ("in cerebro").

Such are the principal features of the surgery practiced by Bruno and explained in his work, quoted later in this article. He wrote his treatise in the year 1252, at the request of his patron and friend Andrea (Andrew) of Vicenza, who is otherwise unknown. The title of his work in some manuscripts and references is *Chirurgia Magna*, in others *Chirurgia Major*. Its author's name, by the way, is sometimes spelled Bryno, which is the earlier form of it. Though written in 1252, the work was first published in 1519, at Venice; and, again at Venice, it formed part of a collection entitled *Collectio Chirurgica Veneta*. The manuscript now in the Library of Congress is without date, but internal evidence suggests that it must have been copied within a century after Bruno wrote the treatise; that is, it is a fourteenth century manuscript. Its value may be judged by an additional extract from the Library of Congress statement: "No printed edition is available in the Library of Congress or is as yet listed in the Union Catalogue of American Libraries (still incomplete). The remarkable collection in the Surgeon General's office of early books relating to the history of medicine contains works by Lanfranchi, Guy de Chauliac, and other approximate contemporaries of Bruno, but does not contain this treatise.

A manuscript at Erfurt, Germany, is reported to contain another work, the *Chirurgia Minor*, also by Bruno of Longoburgo."

A minute description of the manuscript, or codex, as such an old writing is generally called, is contained in the same statement, as follows:

"The codex is on vellum of a rather coarse quality, several leaves toward the middle and end of the book being imperfect, sometimes pieces out with sewed fragments. There are 168 leaves, 22.9 by 17 centimeters, in single columns, twenty-three lines to a page. The old folio numbering in Roman numerals is correct to 87; there are errors at 88 and again at 99, so that the last leaf is wrongly numbered CX. But in the corner of the last fly leaf is written 108, a modern notation of the correct foliation.

"The binding is modern, with paper fly leaves at front and back. On the inside of the front cover is written: Longoburgensis, Chirurgia magna, xivth ctry.

"The collation is in thirteen quires of eight, except that the third and ninth have nine, the eleventh six, the twelfth ten, and the thirteenth twelve.

"The work is divided into two books of twenty chapters each. The general title of fol. 1 and the colophon on fol. 108 are in red, as are also the titles for the list of chapter topics on fol. 2v, and for chapters 1, 2 and 3 (fol. 3v, 4v and 6v). From here onward the chapter titles are omitted, though space has been left for them and they were evidently expected to be filled in.

"The first letter of the prologue and the first letter of Book II (middle of fol. 66v) are in blue and red. Otherwise the text, though written with admirable clearness in a firm square hand, is unilluminated.

"Fol. 1, title in red, reads (see illustration): Incipit prolongus (*i. e.*, prologus) magnae chirurgiae magistri Bruni Longoburgensis quem misit ad amicum suum Andream, ex dictis sapientium veterum breviter compilatae (but the codex reads *compilabo*). (Here begins the prologue of the *Great Surgery* of Master Bruno of Longoburgo which he sent to his friend Andrew—briefly compiled from the sayings of the wise men of old.)

"Fol. 108, colophone in red, reads: Expletus est liber supradictus a dicto Bruno Longoburgensi anno domini M.CC.LII indictione X. mense Ianuarii apud civitatem Padue in loco Sancti Pauli—Deo gratias Amen Amen Amen. (Finished is the aforementioned book of the aforementioned Bruno of Longoburgo in the year of our Lord 1252, indiction 10, month of January, in the city of Padua, in the place of Saint Paul—Thanks to God Amen Amen Amen.)" So far the description furnished by the Library of Congress.

The prologue begins (see illustration): "You asked me a long time since, my venerable friend Andrew of Vicenza, to write for you in brief, clear language a book on surgery, selected from the writings of the glorious Galen, Avicenna,

Almansov, Abul Kasim, Ali, and other experts of yore.

"On account of the importance of the subject I have given long devotion to this task, for, as the Searcher of all secrets knows, I have no wish to cheat you of your desire. I have, indeed, sought to do my duty by you thoroughly. Therefore, since the wish of my protector's munificent right hand has great weight with me, I acquiesce with all my heart in your request; and I have not hesitated to accept the aid and collaboration of my master, since it is pleasing to me to satisfy your desire.

"First, then, let it be understood that this book is divided into two parts, at the beginning of each of which I have placed headings, twenty to each part. To these I refer by their numbers so that the text can be readily found. It is, moreover, composed faithfully according to the plan that you have suggested, and it follows the descriptions which are to be found in the books of the ancients, whose remembrance already . . ."

This ends the first page of the Prologue. It will be noted that Bruno, in both the first and the last paragraphs, claims no originality, but names as his authorities one Greek and four Arab physicians of renown. Bruno's work, however, is much more than a compilation. He insists that surgeons must learn by seeing surgical operations and watching them long and diligently, though there are many things to be learned from books, even about the most difficult problems of surgery.

4508 Willowbrook Avenue.

CLINICAL NOTES AND CASE REPORTS

SURGICAL MOTION PICTURES IN COLOR

A METHOD ADAPTABLE TO THE OPERATING ROOM

By ERNEST W. PAGE
San Francisco

IT has often been said by those who are acquainted with the use of motion pictures in medicine that the one factor which prevents the development of surgical motion pictures is the lack of natural coloring, since it is difficult to differentiate some anatomical structures in black and white.

Many attempts have been made to obtain colored records of operations, but the methods used have been so costly or beset with difficulties that they are almost prohibitive. The Kodacolor method has been almost adaptable, but requires so much illumination that special equipment is necessary, requiring arc lights which are associated with a definite hazard. Moreover, the results cannot be projected to any size over three feet in width without suffering greatly in brilliance.

With these facts in mind, a two-color modification of the Kodacolor system was devised which obviates these difficulties and enables the

use of the ordinary incandescent illumination found in the hospital, at the same time permitting the finished picture to be projected to full size.

The method consists in substituting a two-color filter, red and green (Wratten gelatin, Nos. 28 and 40), for the ordinary Kodacolor taking filter, and a similar combination (Wratten gelatin, Nos. 23B and 69) for the ordinary Kodacolor projection filter. Two equal segments of red and green are mounted between discs of celluloid or optical glass of such a size that they will drop into Kodacolor filter holders, or into any holder made to slip over a lens with a speed of at least $f\ 2$.

With this filter combination the pictures may be taken in one-third the usual amount of light for Kodacolor (the exposure factor is eight times instead of twenty-four) and projected with three times the brilliance. Two 500-watt spot lamps concentrated on the field of operation are sufficient.

The colored surgical pictures which the writer has obtained with this method have been highly satisfactory. The various shades of reds, yellows, and greens are more brilliant than those obtained with Kodacolor, although blues will not be reproduced and will show as greens. Blue, however, is a color infrequently met with in the operating room. The color rendition is identical with that of the technicolor process found on the professional screen.

Surgical motion pictures have been found valuable for instruction, for presentation before groups, and for personal records. It is hoped that the addition of color will further promote their use.

2180 Washington Street.

A NEW INSTRUMENT FOR EXPOSING URETHRAL CARUNCLE

By H. H. PARSONS, M. D.
San Bernardino

WHILE the removal of a urethral caruncle would seem to be a simple procedure, it sometimes is a very difficult one, especially when the sessile base extends into the urethra for some distance, such conformation accounting, no doubt, for their tendency to recur due to incomplete removal.

In order that the tumor and its base may be adequately exposed and the surrounding tissues protected from the spark of the high frequency electrode, the instrument here depicted was devised. For lack of a better name I have called it the "carunclescope."

The instrument is made of hard rubber, except the handle which is metallic, and is essentially the size and shape of a common ear speculum with a handle attached. The small end is solid and rounded, and is to be inserted into the urethra. The base is hollow and the side opposite the handle is occupied by a slot into which the caruncle and its base are manipulated for complete exposure. Should the growth be too large to fit into the slot it may be treated one-half at a time.



Carunclescope

In using the instrument the handle is held pointing upward, as the caruncle is usually situated on the posterior part of the urethra, thus allowing it to nest in the slot, which is three-eighths of an inch across at the base of the speculum.

After the tumor is exposed it may be treated according to the accepted technique, using either the monopolar or bipolar current, as preference may indicate.

The removal of these growths by the high frequency current is to be preferred to excision, as the scar left is soft and pliable and there is less danger of leaving a strictured urethra.

The instrument is subject to improvement in that it could be electrically lighted. It may also be sheathed in metal, leaving sufficient dielectric exposed about the slot so that sparking would not occur. In this case the handle would serve as a binding post and the spectrum itself as the indifferent electrode.

668 E Street.

IODIN DOUCHES IN THE TREATMENT OF TRICHOMONAS VAGINALIS*

By HERVEY K. GRAHAM, M. D.
San Diego

THE treatment of *Trichomonas vaginalis* in our hands has been satisfactory only so long as the patient has remained under treatment. With the discontinuance of treatment, the vaginal discharge and irritation have returned together with the demonstration of the organism in the smear. Various medicated tampons, mercurochrome, powdered boric acid, bisodal, alkaline and permanganate douches have been used with only temporary satisfactory results.

The substitution of weak iodine douches for the douches formerly used has brought results which are most gratifying inasmuch as they are permanent. The lesions of the mucous membrane clear rapidly and prompt relief from the vaginal irritation and discharge is experienced. Repeated examination of the vaginal smear shows the organism to be permanently eradicated.

Our present method for the treatment of *Trichomonas vaginalis* follows that advocated by Davis with the substitution of an iodine douche for the alkaline douche. Our procedure may be outlined as follows: Two or three times a week the mucous membrane is washed with green soap and water, dried, painted with five per cent mercurochrome, and the vagina packed with alkaline powder containing bismuth salicylate; on alternate days the patient uses a douche consisting of one dram of tincture of iodine to one quart of water.

2001 Fourth Street.

* From the Rees-Stealy Clinic, San Diego.

BEDSIDE MEDICINE FOR BEDSIDE DOCTORS

An Open Forum for brief discussions of the workaday problems of the bedside doctor. Suggestions for subjects for discussion invited.

CHRONIC BRONCHIAL ASTHMA

ALBERT H. ROWE, OAKLAND.—Bronchial asthma due to any cause, when untreated usually becomes more persistent and chronic. Such chronic bronchial asthma may be discussed under two headings: (1) the controllable type, and (2) the intractable type.

1. Fortunately the controllable cases constitute approximately 90 per cent of the total.¹ They are due to one or more of the various allergens which, for convenience, may be classified under the headings: pollens, foods, animal emanations, dusts, fungi, orris root, and other miscellaneous substances. The value of a carefully taken history in the determination of the allergens causing the asthma must be emphasized. Cutaneous tests with a large number of allergens of all types should be routine. Thereafter intradermal tests with those important allergens to which negative or questionable reactions occur are important. Because of the absence of definite cutaneous tests the use of 1-200 or 1-100 dilutions of the testing extracts is permissible. Positive tests lay suspicion on the reacting allergens, the etiologic rôle of which can gradually be decided by therapy based on such reactions. The occurrence of negative reactions in about 10 per cent of patients sensitive to pollens and other inhalant allergens and in about 75 per cent of patients sensitive to foods must be remembered. This necessitates the use of trial therapy with inhalant allergens or environmental control which removes all suspected allergens of this type from the patient as a diagnostic aid. In my experience and in the experience of other physicians the use of my "elimination diets" for diet trial in patients suspected of food allergy has been of great help. When skin reactions to foods occur, the effect of the exclusion of such specific foods may be determined or the "elimination diets" may be used, being modified according to the reacting foods.

The controllable cases of bronchial asthma usually require prolonged supervision over a period of one or even several years. The patient must coöperate most conscientiously. Pollen-sensitive patients frequently require perennial therapy for two or more years. Good effects from such treatment, as with other types of therapy, are usually evident in a few weeks, but permanent desensitization requires the longer period. Food allergy necessitates prolonged supervision so that unwitting breaks of the diet may be determined and the patient can be encouraged to hold to the diet,

thereby bringing about possible desensitization. Hypodermic or oral desensitization to foods may also be tried. Desensitization to various animal emanations or dust extracts prepared from the patient's environment or to other miscellaneous allergens, such as orris root or pyrethrum, may be indicated as the control of the patient progresses. All of this requires time and without it the physician cannot obtain satisfactory results.

The occurrence of bacterial allergy in bronchial asthma becomes less evident as I study my patients with increasing care for the presence of the various other allergies already discussed. In my experience I have records of only five or six patients whose asthma has been definitely controlled by the use of vaccines or through nasal surgery. Moreover several confrères specializing in nose and throat have few, if any, patients whose asthma has been cured by their surgical therapy. Therefore my opinion continues to be that bacterial allergy is rarely the main cause of asthma. Certainly in childhood it practically never occurs, and it is quite uncommon in adult life. However, obvious infections in the sinuses, together with polyps, should receive surgical attention, but only after careful allergic control has been established. Likewise, vaccines, especially of bacteria which produce positive intradermal tests, should be used in selected cases especially where purulent bronchitis or obvious sinusitis is present. The possibility that benefit from such therapy may be nonspecific in nature is well recognized, though in rare patients specific desensitization seems to occur. The raising of specific or general immunity by stock or autogenous vaccines undoubtedly occurs, and to the benefit of the patient.

2. Intractable asthma becomes less frequent as the diagnostic and therapeutic procedures already outlined are used more persistently and intelligently by the physician. However, a few patients continue to have mild or severe asthma in spite of all effort. In such patients the possibility of a bronchiectasis or chronic emphysema must be kept in mind. The occurrence of bronchial constrictions, foreign bodies, enlarged glands, or inspissated mucus as a cause of wheezing must be remembered. Myocardial weakness or coronary sclerosis also produce symptoms simulating asthma. Obscure pulmonary or glandular tuberculosis should be considered.

It is my opinion also that certain patients may be sensitive to such a large number of inhalants or foods with or without skin reactions that the control of their allergies is very difficult. Where such allergies are evident it is most important to continue indicated therapy for two or three

¹ Rowe, A. H.: Food Allergy—Its Manifestations, Diagnosis and Treatment, with a General Discussion of Bronchial Asthma. Lea & Febiger, Philadelphia, 1931.

years, modifying it as indications arise, for such persistence is not infrequently awarded with success.

With intractable cases the use of the iodids by mouth or by vein, the free use of adrenalin or ephedrin for relief, peptone therapy by mouth, subcutaneously or by vein, and the use of non-specific protein therapy are justifiable. Prolonged physical rest is always of value. Roentgen-ray therapy of the lungs or the spleen has failed in my hands, and reports of Doctor Pines indicate that hyperpyrexia induced by diathermy is useless. As final advice I would again emphasize the importance of continued search for possible inhalant or food allergies and of prolonged coöperation of the asthmatic patient with the physician.

* * *

SAMUEL H. HURWITZ, SAN FRANCISCO.—Not infrequently physicians express their disappointment with the results of treatment of the chronic bronchial asthmatic. Reams, they say, have been written during the past decade about sensitization, allergic manifestations, cutaneous tests, food allergy, and what not, and yet the chronic bronchial asthmatic continues to wheeze merrily on. The open sesame in the treatment of the chronic bronchial asthmatic has not yet been found nor is it likely to be found in the application of one idea or one therapeutic measure to the treatment of these patients. Our knowledge of the importance of allergy in the pathogenesis of certain forms of asthma has no doubt led to very striking therapeutic results in this type of the affection. It has, however, served in an even greater measure to awaken a new interest in these chronic sufferers and to call forth a greater optimism and willingness of physicians to do their parts in making these invalids more comfortable both physically and mentally.

Bronchial asthma should be regarded as something more than an effect resulting from a single process. A broader conception of the disease is bound to lead to more successful therapeutic measures. One cannot escape the conclusion that there exists in asthmatics a hereditary constitutional defect in which every cell and tissue is profoundly affected. It is not easy in the present state of our knowledge to define in terms of biologic changes in what way an individual with an allergic constitution differs from a normal person. Some of the characteristics of the allergic constitution which have been stressed by various students of this subject are hyperexcitability of the sympathetic nervous system and neurocirculatory apparatus, increased permeability of the skin and mucous membranes, and a lack of reactive power against sensitizing agents. The increased vulnerability of the skin and mucous membranes of such individuals may help to explain why it is that they become sensitized to weak allergens which produce little or no effect upon the normal person. The importance of this hereditary factor in allergic asthma has been stressed in order to

point out better the reasons why the results of treatment by specific desensitization are at times disappointing and incomplete. Desensitization in such individuals may temporarily remove from the field of action one or more allergens and thereby give relief from symptoms, but it cannot change fundamentally the altered reactivity of the body cells.

From the viewpoint of preventive treatment it is important that clinical and laboratory methods be found and developed for the early recognition of the allergic state, so that unnecessary exposure of such persons to powerful sensitizing substances may be prevented. It is also essential that general therapeutic measures be early undertaken to lessen the hyperexcitability of the sympathetic nervous system and to modify the vulnerability and irritability of the mucous membranes. A well balanced, high vitamin-containing diet is of the greatest importance, particularly in those chronic bronchial asthmatics whose vitality has been depleted by a long illness and many sleepless nights. To this should be added sunshine, natural or artificial, cod-liver oil, and large doses of calcium, the latter not so much for the purpose of overcoming bronchospasm, but rather to diminish neurocellular hyperexcitability and decrease the permeability of cell membranes.

It may well be that specific desensitization to inhalant and ingestant allergenic substances accomplishes little more than a more or less prolonged modification of the allergic state. The exact mechanisms underlying desensitization of a hypersensitive patient are little understood. It may be assumed that in some way the permeability of the cells lining the mucous membranes of the body is lessened, so that they no longer react unfavorably to certain protein substances, contact with which had heretofore given rise to an allergic reaction.

Specific desensitization is frequently very difficult because of the great prevalence of multiple sensitization, which is the rule with individuals with an allergic constitution. In these instances it becomes necessary to alter the allergic balance by nonspecific agents, such as peptone or vaccines.

Another great stumbling-block in the treatment of the chronic bronchial asthmatic is the great incidence of infection among them. Although it is generally recognized that secondary infection is commonly grafted on an allergic mucous membrane, the great importance of primary infections of the upper and lower respiratory tract as a cause of chronic asthma is only now receiving due emphasis. In our experience many of the disappointing therapeutic results are obtained in the chronic asthmatic whose symptoms are the result of sinus disease, chronic bronchitis, pneumonia, influenza or, in children, pertussis. Treatment of this group of chronic asthmatics should be directed toward the removal of obvious foci of infection and improvement in the patient's general resistance to infection.

The best results in the treatment of nasal sinus disease in the chronic bronchial asthmatic can

be achieved only by the close coöperation of the rhinologist and internist devoting their time and efforts to a study of these patients.

Finally it should be emphasized that the unstable psychic mechanism of the chronic bronchial asthmatic requires encouragement. Every conscientious effort to help him on the road to improvement by all available means is of great psychotherapeutic value.

* * *

GEORGE PINESS AND HYMAN MILLER, LOS ANGELES.—The doctor's rôle in the care of the asthmatic must be played with the realization that he is caring for a patient suffering from a chronic constitutional disease which produces periodic disability of varying degrees of severity. There is no question of a cure here just as there is no question of a cure in diabetes. The doctor's efforts are directed toward the giving of sufficient relief so that his patient may lead as normal an existence as is possible.

The modern treatment of asthma aims to accomplish this by seeking out the patient's sensitivities and idiosyncrasies so that he may be forewarned with regard to offending substances which can be avoided, or forearmed by desensitization against those which cannot. This knowledge is best obtained by means of a careful and searching history of the patient, his environment, and his diet, and by means of skin tests. Skin tests, for which no adequate substitute has been found, are to asthma what the Wassermann reaction is to lues, and the blood sugar determination is to diabetes. To deny them to the allergic individual is as reprehensible as to deny him the relief afforded by adrenalin during an attack of asthma.

Aside from measures directed toward the prevention, much of the doctor's efforts are directed toward the relief of individual attacks. Before discussing this phase of the care of the asthmatic, we must consider the question of differential diagnosis, upon which is frequently dependent the success or failure of treatment.

Perhaps in no condition is a careful family and personal history of so much aid to the doctor as in bronchial asthma. The hereditary and constitutional character of the disease and the periodicity of its symptoms are ordinarily easily brought out, and when weighed in conjunction with a careful and complete physical examination, x-ray of the chest, and skin tests, make possible its differentiation from cardiac disease, pulmonary tuberculosis, newgrowths of the lungs, foreign body in the lung, simple pulmonary emphysema, bronchiectasis, etc. However, it must be realized that practically all of the above conditions may coexist with asthma resulting either from its chronicity, or having asthma as a symptom. Because of limited space we shall only discuss the relief of asthmatic dyspnea in individuals suffering from uncomplicated bronchial asthma. These may be divided into three groups.

The first group consists of individuals who have a simple spasmodic acute attack of moderate or great severity wherein efficient treatment for the relief of symptoms consists of the administration of epinephrin.

The second group consists of those individuals who, in addition to the above acute recurring paroxysms, have persistent dyspnea. These individuals may also be temporarily relieved by the administration of epinephrin, and at times where there is a definite periodicity, warded off by the administration of ephedrin about one-half hour before the expected onset of the attack.

The third group consists of those individuals who have persistent, violent, and at times fatal dyspnea. It is this group which causes the greatest apprehension, not only to the patient but to the doctor who has exhausted all his remedies and ingenuity in attempting to give the patient some measure of relief. These patients have often been given adrenalin to the point where frequent and repeated doses do not in the slightest degree relieve the spasm of the bronchi or diminish the marked cyanosis. They have frequently been exposed to any number of remedies such as calcium chlorid, sodium iodid intravenously, inhalations of oxygen, asthma smoke powders, and chloroform. They have frequently had many doses of several of the narcotics such as codein, pantopon, and morphin. At times, also, they have had atropin, and scopolamin. Not infrequently have we seen death result in individuals such as these, and we have come to feel that in each instance the narcotics have been directly responsible, so that it is now our practice in cases of the severity above described not to administer any form of opium or its derivatives.

The following regimen has often been instituted with the result that we have been able to carry such patients through a severe crisis of prolonged asthma:

1. The administration of adrenalin is entirely discontinued.
2. Caffein is given hypodermically at intervals of three hours.
3. Chloral and bromids are given per rectum in large doses (sodium bromid, gr. LX, chloral hydrate gr. XXX).
4. Fluids are forced preferably by rectum, or if this is not possible, intravenously, as it is our experience that these patients are prone to become markedly dehydrated.
5. If cyanosis is marked, carbogen inhalations are given. This has proven far more effective than inhalations of oxygen alone.
6. If the secretions are very dry, sodium iodid is administered intravenously every three or four hours until a mild iodism is produced.
7. We have often found that the skin of the patient is cold and clammy and much comfort can be given by the application of hot-water bags to the point where the skin assumes its normal temperature.

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Editor GEORGE H. KRESS

Associate Editor EMMA W. POPE

Associate Editor for Nevada HORACE J. BROWN

Associate Editor for Utah J. U. GIESY

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Responsibility for Statements and Conclusions in Original Articles.—Authors are responsible for all statements, conclusions and methods of presenting their subjects. These may or may not be in harmony with the views of the editorial staff. It is aimed to permit authors to have as wide latitude as the general policy of the journal and the demands on its space may permit. The right to reduce or reject any article is always reserved.

Contributions—Exclusive Publication.—Articles are accepted for publication on condition that they are contributed solely to this journal.

Leaflet Regarding Rules of Publication.—California and Western Medicine has prepared a leaflet explaining its rules regarding publication. This leaflet gives suggestions on the preparation of manuscripts and of illustrations. It is suggested that contributors to this journal write to its office requesting a copy of this leaflet.

sequence then follow the papers of Drs. Daniel Crosby of Oakland, Rexwald Brown of Santa Barbara, J. Rollin French of Los Angeles, Ralph A. Reynolds of San Francisco, J. L. Pomeroy of Los Angeles, Frank L. Kelly of Berkeley and Charles B. Pinkham of San Francisco.

In addition to the above, several others of the special articles in the current issue have somewhat of a public health or medical economics relationship in that they trench on the domain of preventive as well as of curative medicine. Thus may be mentioned the papers by F. G. Crandall on Jamaica Ginger Paralysis, Glenn Myers on The Mental Hygiene Survey of California, and A. C. Reed on Organized Tropical Medicine.

In the Miscellany Department of this number of CALIFORNIA AND WESTERN MEDICINE are also presented a number of topics which may be of interest in connection with the papers above referred to, because they may be taken as examples of some of the problems which arise in private and public health practice.

* * *

These Medical Economics Topics Worthy of Serious Thought and Study.—This exposition of so many papers on subjects of non-scientific nature may not meet with the approval of a considerable number of members of the Association. For such colleagues it may be stated that one of the reasons the papers are massed and printed in a single issue was the thought that through such grouping in one issue the attention of members could be called, not only to the importance of these medical economics problems, but to the extreme and almost insurmountable difficulties which we face when we try to indicate to one another what are practical solutions that would meet with general approval and acceptance.

The situation which confronts us here is akin to that which as physicians we meet again and again, when we are called upon to make diagnoses of certain diseases, the pathology of which is not clear, and in which in the past, empiric and experimental medicine have alike failed to find remedial agents that are satisfactory to either physician or patient. In such disease complexes the large number of therapeutic measures which are mentioned in the literature, at times seem to include a trial of almost every and anything, a condition which nearly always may be taken to indicate that practically all measures are of only slight remedial worth. However, when such obstacles are met with in medicine, it usually means that devoted disciples of our guild give of themselves without stint or hope of reward, in the effort to find ways and means whereby physicians may be victorious; and that through such constant study and effort such work is often rewarded with success.

In similar manner—in these intricate problems of medical economics, which are involved and made more difficult through the close relationship with social and political factors—it is necessary for the medical profession to continue its earnest studies if it would avoid the deplor-

EDITORIALS*

MEDICAL ECONOMICS ARTICLES IN THIS NUMBER OF CALIFORNIA AND WESTERN MEDICINE

The Medical Economics Symposium at the Sixtieth Annual Session of the California Medical Association.—At this year's annual session of the California Medical Association which was held at San Francisco in April last the subject of medical economics was given special prominence. The Council and Program Committee brought about this emphasis of the topics through the presentation of the medical economics reports and papers at general, instead of at section meetings. Much interest was evidenced in the discussions by the members who were in attendance.

* * *

These Medical Economics Papers Are Printed in the Current Number of California and Western Medicine.—To better bring home to the members at large a consideration of the medical economics papers which were read at San Francisco, these are being printed as a symposium in this September number of CALIFORNIA AND WESTERN MEDICINE.

The series starts off with the report of the California Medical Association Committee on Medical Economics, which was made by its chairman, Dr. John H. Graves of San Francisco. In

* Editorials on subjects of scientific and clinical interest, contributed by members of the California Medical Association, are printed in the Medicine Today column.

able results in situations which are arising in America, just as they arose in Europe.

* * *

Physicians to Receive Proper Financial Rewards to Enable Them to Do Efficient Work, Must Be as Alert in These as in Purely Scientific Problems.—The really big rewards of the practice of medicine are not to be found in unusually large financial returns, but rather in the fulfillment of efficient service to patients and to the public. With such service, however, should come that amount of financial reward which the background of training as well as the nature of the services which are rendered by physicians justly entitles them. Well trained, efficient physicians, as faithful servants of the state and of the public, deserve proper financial remuneration, and have a right to use all legitimate measures to acquire and maintain such.

It would be a truism to state that our modern-day civilization is quite different from that which has gone before, and that here in America our mass production and great material prosperity of recent years—with their elements of wealth distribution quite different from those of former days—present special and new problems to practically all professions and vocations, and particularly so to the guild of physicians. For times have changed. We must acknowledge that we can no longer practice medicine after the manner of previous years, when there was full assurance that all would be well with our economic futures, both for ourselves in our own time, and for our successors.

Therefore, because the times are different, and because new forces are at work which could seriously change medical practice as we understand it, we must analyze the forces in our environments and ask ourselves what would be the places which our profession and which we as individual physicians would be obliged to take, if a new scheme of things based on a so-called state health insurance plan came into existence.

The papers on medical economic topics above referred to are an indication of the thought which colleagues in different portions of California are giving to the consideration of these matters. These fellow physicians have gone to considerable effort to present their respective viewpoints to us. We are not called upon to agree with them in their various contentions, but we can at least read what they have written, and then ask ourselves, each of us, whether we agree or disagree with them in this or that, and why.

* * *

All County Societies Should Discuss This Symposium.—The thought suggests itself at this point that this symposium of papers may be made to have a real value to the California, Nevada and Utah Medical Associations if every component county medical society in the three states, in the near future, would give over the part or the whole of an evening in further discussion and analysis of the papers and topics printed in this number of CALIFORNIA AND WESTERN MEDICINE.

If the respective county society program committees would ask three or more local members to bring in critical discussions on different phases of these medical economics topics, and if at such meetings all members would bring their copies of CALIFORNIA AND WESTERN MEDICINE for reference and to be used in asking questions, then some real progress would be made, at least as relates to the creation of a greater interest and alertness on these important problems. For it is no exaggeration to state that these are real and vital problems that are bearing down on the profession for proper solution, and that if we fail to give them our serious consideration and action, then changes in modes of practice are apt to take place which will be anything but satisfactory to us. And this applies to all and every one of us, both in our own time and in the days to follow when our successors will be called upon to bear the brunt of the battle.

In conclusion, permit us to urge again that you give yourself the privilege of reading these articles at an early day and that you seek to have the program committee of your county medical society set aside an evening for further discussion of these medical economics topics. If such coöperation is given, it will be easier for the California, Nevada and Utah Medical Associations to find the paths of procedure that will lead to the greatest protection of both the public and the profession.

CALIFORNIA MEDICAL PRACTICE ACT— ITS NEW AMENDMENT RELATING TO BOARD APPOINTMENTS

The New Amendment Was a So-called "Administration Measure."—The California Legislature of the present year approved more than one thousand new laws. Some of such, which had to do with medical practice, have been discussed at considerable length in CALIFORNIA AND WESTERN MEDICINE. One of the bills of which practically no mention has been made concerned itself with appointments to the Board of Medical Examiners of the State of California. It was known as an administration measure, and with a large number of similar bills affecting different state boards was passed in the last days of the session. Some of these bills were fought at the time, but with little avail; and a similar result would probably have been the story as regards the state medical examining board measure. In the Miscellaneous Department of this number is printed the full text of this new amendment. (See page 239.)

* * *

The New Amendment Makes Possible Radical Changes in Board Personnel.—As noted in those comments, by virtue of this amendment to California's medical practice act, Governor James J. Rolph, Jr. will have the power within the next six months of appointing five to seven new members to our state medical examining board in case he so desires.

Somewhat analogous powers were given as regards the dental and pharmacy boards, the Cali-

ifornia State Board of Health, and other examining boards.

It is not the purpose at this time to discuss this new amendment, but rather to call the attention of the five thousand physicians who form the membership of the California Medical Association to its existence and its possibilities. The Council of the California Medical Association at its September meeting will no doubt give special consideration to this new problem.

* * *

The Legislature Cannot Pass Laws Affecting the Initiative Boards.—In passing, it may be proper to again call the attention of the members of the medical profession of California to the fact that the Legislature made no attempt to change the method of appointment to the osteopathic and chiropractic boards of examiners, for the good and sufficient reason that the practice acts of those cults rest on an initiative vote of the people and therefore are beyond amendment by any legislature!

* * *

What Will Be the Reaction of the Organized Profession to This New Law?—This new amendment brings to the front the question as to what attitude the organized profession will take in these new premises. Here, as in other matters, there are two sides to the question.

From the standpoint of practical civil politics, the contention is brought forward that an incoming Governor of the State must be entrusted by its citizens with the responsibility of its government. It would seem, therefore, that such an executive should be surrounded by administrative boards which would work to carry out his own, rather than antagonistic policies, the people then judging by the results achieved, whether or not such an executive and his party associates should be continued in office. As regards state boards which spend money raised by taxation for general lay activities such as roads, prisons, etc., such harmonious relationship to the Governor of the State would seem to be quite proper.

When, however, a state board such as that of the Board of Medical Examiners of the State of California, the funds of which do not come from general taxation on property, but from license and similar fees having to do with the right to practice the profession of medicine—a type of class legislation—and when the functions of such a board would seem to be absolutely divorced from the political activities of the State, then the question of the need of special intervention by a newly elected chief executive of the State naturally comes up for consideration, at least in the minds of members of the medical profession.

* * *

A Survey of Former Laws May Aid in Consideration of the Problem.—To better orientate ourselves on the important issues that are involved in this new law, it may aid us if we go back and survey the development and source of the major changes which have taken place in its

medical laws since California passed its first medical practice act, more than fifty years ago. It is possible that some provisions and amendments of former years would be far more appealing to members of the medical profession than this new appointive amendment which was approved by the Sixtieth California Legislature in the present year 1931. We shall therefore present some excerpts from former California medical practice acts, because they indicate what was the nature of the appointing power for board members in the days gone by.

‘ ‘ ‘

The original law of 1876:

The Appointive Provisions of the original California Medical Practice Act of April 3, 1876, are as follows:

"Sec. 2. Each State Medical Society incorporated, and in active existence on the tenth day of March, eighteen hundred and seventy-six, whose members are required to possess diplomas or licenses from some legally chartered medical institution in good standing, shall appoint annually a Board of Examiners, consisting of seven members, who shall hold their office for one year and until their successors shall be chosen. . . ."

‘ ‘ ‘

The Amended Section Two of April 1, 1878, states:

"The Medical Society of the State of California, the Eclectic Medical Society of the State of California, and the California State Homeopathic Medical Society, corporations organized and existing under and by virtue of the laws of this State, and no other corporations, society, persons or person, shall appoint annually a Board of Examiners, consisting of seven members, who shall hold their office for one year, and until their successors shall have been chosen and qualified. . . ."

‘ ‘ ‘

California Supreme Court Decision on this amendment of 1878:

The 1931 "Directory of the California Medical Association" on page XXXIII prints some excerpts from a California Supreme Court decision on the validity of this 1878 amended Section Two. That action is known as *Ex Parte Fraser, Habeas Corpus, No. 10,361*. From this important decision, which established the validity of appointments by the state medical society instead of by the Governor of the State, some excerpts will be given:

"It is urged by counsel for petitioner that the Act of April 3, 1876, 'to regulate the practice of medicine,' as amended in 1878 (Laws 1877-78, page 918), is void, because a violation of the Constitutional provision: 'Corporations may be formed under general laws, but shall not be created by special Act.'"

"The second section of the Act confers the exclusive power to appoint boards of examiners upon three medical societies. . . ."

"We shall assume that the State, in the exercise of the police power, may provide for boards authorized to examine persons seeking to be admitted to practice medicine, to be appointed by any citizen or citizens named. . . ."

"There is nothing in the language of the law to indicate that it was the purpose to confer the power of appointment upon the particular corporations. If it should be made to appear that the societies named had never been incorporated, the power of appointment would still remain to be employed by the socie-

ties, or aggregations of individuals who had adopted the society names mentioned in the Act. The assumption of the power by these individuals or societies would be the assumption of a public duty, and the performance of the duty simply (and disconnected from the reception of fees) would not be profitable to them as societies, nor—should they happen to be incorporated—as private corporations. The second section of the Act confers the power of appointing the boards of examiners upon three named societies which are said to be 'existing corporations'; but, as we have seen, this designation does not oblige us to declare that it was intended to confer the power of appointment on the three societies as corporations. The words 'existing corporations' may be treated as merely '*descriptio personarum*.' . . .

"Our conclusion is that by conferring the authority and imposing the duty of appointing boards of examiners on the three societies named in the Act, the Legislature did not exceed the limitation of its powers contained in the provision of the Constitution above quoted. . . ."

The Amended Law of 1889:

From the "Fourth Biennial Report of the Board of Medical Examiners of the Medical Society of the State of California," issued in 1889, Section Two as again amended is quoted:

"Sec. 2. Each State Medical Society incorporated, and in active existence on the tenth of March, eighteen hundred and seventy-six, whose members are required to possess diplomas or licenses from some legally chartered medical institution in good standing, shall appoint annually a Board of Examiners, consisting of seven members, who shall hold their office for one year, and until their successors shall be chosen. . . ."

The 1901 provisions:

The "Official Register and Directory of Physicians and Surgeons in the State of California" for the year 1901 prints again an amended section, which reads as follows:

"Section 1. *Appointment of Board, Quorum.*—There shall be a board, consisting of nine members, which shall be known as the board of medical examiners of the State of California. The members of said board shall be elected as follows: Five members thereof shall be elected by the Medical Society of the State of California, two members thereof by the California State Homeopathic Medical Society, and two members thereof by the Eclectic Medical Society of the State of California. Said members shall be elected annually by said societies, respectively, according to such rules as each society may adopt for the election of members to be elected by it, and the members so elected shall serve for one year, and until their successors shall have been elected and qualified. Each of said societies, respectively, may also elect alternates who shall fill such vacancies as may occur in its representation on the board. . . ."

The Law of 1907:

In the Twentieth Edition of the "Official Register and Directory of Physicians and Surgeons in the State of California," of August, 1908, the amendment of March 14, 1907, is printed. In this amendment it will be noted that for the first time the three state medical associations submitted lists of members, from which lists the Governor was required to make his appointments. This law provided for the conjoint board in which the osteopathic group was given official recognition. The amendment reads:

"Section 1. The Governor shall appoint a Board of Medical Examiners to be known as the Board of Medical Examiners of the State of California, consisting of eleven members. Such appointments shall be made from separate lists presented to him every second year; five members from a list of ten names presented by the Medical Society of the State of California, two members from a list of four names presented by the California State Homeopathic Medical Society, two members from a list of four names presented by the Eclectic Medical Society of the State of California, and two members from a list of four names presented by the Osteopathic Association of the State of California. Vacancies occurring in the representation of said societies, respectively, shall be filled by appointment from said lists. The appointment of each member shall be for a term of two years, and until his successor is appointed and qualified; *provided, however*, that no professor, instructor, or other person in any manner connected with, or financially interested in any college or school of medicine or surgery or osteopathy shall be appointed a member of said board. . . ."

The Recent Law:

Coming down to the year 1921, in the "Directory of Physicians and Surgeons, Osteopaths, Drugless Practitioners, Chiropodists, Midwives," as published by the Board of Medical Examiners, one finds the appointive text of the medical practice act which was in force up to August 14, 1931. In this law the specific reference to schools of the healing art was eliminated. The osteopathic group secured a separate board by act of the legislature, later securing the same by initiative vote of the citizens of California. The provisions therein were as follows:

"Section 1. A board of medical examiners to consist of ten members, and to be known as the 'board of medical examiners of the State of California,' is hereby created and established. The governor shall appoint the members of the board, each of whom shall have been a citizen of this state for at least five years next preceding his appointment. Each of the members shall be appointed from among persons who hold licenses under any of the medical practice acts of this state. The governor shall fill by appointment all vacancies on the board. The term of office of each member shall be four years; *provided*, that of the first board appointed, three members shall be appointed for one year, two for two years, two for three years, and three for four years, and that thereafter all appointments shall be for four years, except that appointments to fill vacancies shall be for the unexpired term only. No person in any manner owning any interest in any college, school or institution engaged in medical instruction shall be appointed on the board, nor shall more than one member of the board be appointed from the faculty of any one university, college, or other educational institution. The governor shall have power to remove from office any member of the board for neglect of duty required by this act, for incompetency, or for unprofessional conduct. . . ."

The Present Law—Amendment of 1931:

The full text of the amended Section One, which was passed in the present year 1931 by the Sixtieth California Legislature, and which became the law on August 14, 1931, is printed in the Miscellany Department of this number of CALIFORNIA AND WESTERN MEDICINE. (See page 239.)

The Above Excerpts Should Suggest Some Interesting Questions.—The perusal of the interesting changes in the personnel of the state board of medical examiners, and particularly of the different methods whereby the appointments of board members were made is commended to the careful consideration of members of the California Medical Association. It is especially significant that the Supreme Court of the State of California, in the decision referred to above, declared that appointments by the state medical societies were as valid as when made by the chief executive of the State. It would be interesting to know whether a majority of the members of the California Medical Association would favor a return to such an arrangement.

An initiative law which would contain a section on appointments of board members, and which would incorporate basic provisions such as are contained in the laws of 1901 or 1907, as quoted above, would place the responsibility of maintenance of professional standards directly upon the state medical societies. The California Supreme Court in its decision of the year 1876 stated this could be done without contradiction of the constitution. The whole subject would seem to be worthy of close study and further investigation. Reference to the report which was made at this year's annual session of the California Medical Association by the special committee on the California Medical Practice Act and on a Qualifying Certificate (so-called Basic Science) Act, and which was printed in the *JUNE CALIFORNIA AND WESTERN MEDICINE*, page 448, will give further information on these important matters.

University of California Staff Studies Virus Which Causes Infantile Paralysis.—Further evidence of the mysterious nature of the filterable virus causing infantile paralysis has just been presented by the University of California Hooper Foundation for Medical Research in a report by Miss B. F. Howitt, research associate in medicine, of studies made under Director Karl F. Meyer.

For some years it has been known that a fluid could be extracted from portions of the brain and of the spinal cord of individuals dying from infantile paralysis which is capable of transmitting the disease to other animals under certain conditions. Because this fluid, even under the most powerful microscopes known to science reveals no traces of living bacteria or germs, but even after being passed through the finest filters available still retains its virulence and is capable of crippling or killing, it is called a filterable virus.

A number of such filterable viruses are known to science, and many theories have been suggested to explain them, including one theory that the virus represents a dormant stage of living bacteria during which they are so small that no technique which man has been able to devise is capable of detecting them. In 1929 two plant physiologists, Vinson and Petre, found that the filterable virus causing the common mosaic disease of tobacco plants was analogous in many ways to a chemical substance.

On the basis of this discovery Miss Howitt began a study of the filterable virus of infantile paralysis, and she found that this virus, as well, has certain similarities to a chemical substance. It shows resistance to treatment with chemicals which kill streptococci, staphylococci, and colon bacilli. After being precipitated, whirled around in centrifuges at a ter-

rific speed, washed, filtered, mixed with acetic acid, heated to 136 degrees Fahrenheit, placed on ice, and otherwise subjected to chemical purification, the fluid and also the material taken out of it in the process were capable of causing infection. By repeated centrifuging, and precipitation with lead acetate, the fluid can be rendered as clear as distilled water, yet it is still capable of destroying the function of certain parts of the nervous system or of dealing death.

Miss Howitt and Doctor Meyer will continue study of the infantile paralysis virus with the hope of further purifying it and perhaps determining something concerning its nature. While no cases of laboratory infection with infantile paralysis have been reported, every precaution must be taken to prevent such infection, including the wearing of rubber gloves at certain stages in the experiment.

This research has been made possible by the financial assistance of an anonymous friend of the university who is supplying \$5000 a year for the support of scientific study and the maintenance of an emergency supply of infantile paralysis convalescence serum.—*University of California Clip Sheet.*

Medical service in the United States each year costs about \$3,106,000,000, according to estimates by the research staff of the Committee on Costs of Medical Care. The committee, under the chairmanship of the Secretary of the Interior, Dr. Ray Lyman Wilbur, comprises a large group of physicians, public health officials and other experts, economists, representatives of institutions and social agencies. The estimates are based on committee studies directed to the problem of adequate scientific medical service to all people at a cost which they can reasonably meet.

A third of the money spent goes to the physician, according to the estimate. Other expenditures estimated are: Medicine and supplies, \$700,000,000; hospitals, \$550,000,000; dentists, \$400,000,000; nurses (other than hospital), \$112,000,000; public health, \$86,000,000; optometrists and opticians, \$50,000,000; chiropractors and naturopaths, \$3,000,000; osteopaths, \$20,000,000; midwives, \$15,000,000; chiropodists, \$15,000,000, and nonhospital dispensaries, \$5,000,000. Families afflicted by illness pay \$123,000,000 annually for necessary extra household help.

The surveys thus far show wide divergencies in medical expenditures in proportion to income; families with incomes below \$1200 spend about \$66 a year on medical service, those with less than \$2000 spend \$71.48, whereas families with more than \$5000 a year average \$311 and those above \$10,000 about \$520.

The committee has found from available data that the average adult man loses seven or eight days a year from illness, and the average woman eight to twelve days.—*Editorial, Journal Missouri Medical Association, August 1931.*

New Health Center at Alhambra.—The latest building of the chain of health centers, in Los Angeles County, was opened at Alhambra, August 15. It will serve a population of approximately 130,000 people residing in Alhambra, San Gabriel, El Monte, Puente, Baldwin Park, Monterey Park, Lamanda Park, and Altadena, in addition to a large area in the San Gabriel Valley. The building will house an emergency hospital section, clinics for cardiac, metabolic, tuberculous, chest, and well-baby cases, and a laboratory, including roentgen, dental and physical therapy units. The Alhambra district health center is a unit in the Los Angeles County Health Department whose division of bacteriology of the bureau of laboratories is decentralized into eleven branches. Dr. Samuel J. Stewart, district health officer, is director of the Alhambra Health and Welfare Center. The diagnostic and educational services are free regardless of financial or social status, but treatment clinics are restricted to the indigent sick. The Los Angeles County Health Department functions in an area of 3400 square miles under the direction of Dr. John L. Pomeroy.—*Journal of the American Medical Association, September 13, 1930.*

MEDICINE TODAY

This department of California and Western Medicine presents editorial comment by contributing members on items of medical progress, science and practice, and on topics from recent medical books or journals. An invitation is extended to every member of the California, Nevada and Utah Medical Associations to submit brief editorial discussions suitable for publication in this department. No presentation should be over five hundred words in length.

The Use of Contact Glasses.—In view of the recent publicity given to the use of contact glasses by an optometry convention, it might be well to define the exact field of these lenses to the profession at large. In the newspaper accounts it was stated that refractive errors would now be able to be corrected by a new type of glasses without a frame which are to be worn in contact with the eye beneath the lids. This statement is rather overdrawn.

Contact glasses have been used by oculists for a number of years, and recent improvements in design by Professor Heine, as carried out by the firm of Zeiss, have made the field of application wider.

At present the contact glass consists of a thin glass cup which is ground with optical precision. This cup consists of a central portion with a curve greater than that of the cornea and with a diameter slightly larger than the cornea, and a less curved surrounding shoulder which rests on the conjunctiva covering the sclera adjacent to the cornea. When the glass is applied to the eye this shoulder extends up under the upper lid and downward beneath the lower lid.

As the curve of the central portion of the contact glass is greater than that of the cornea there is naturally a space between the cornea and the glass when the shoulder is placed in contact with the eyeball. This space is filled with physiological saline solution of which the index of refraction is about that of the cornea. The optical effect of this is to make the glass, space, and cornea practically homogeneous. Thus the anterior refracting surface of the optical system of the eye is transferred from the anterior surface of the cornea to that of the contact glass. This surface is so ground by the manufacturers as to give it the effective curve of a normal nonastigmatic cornea. Thus the application of the contact glass immediately eliminates all abnormalities of refraction which might be caused by irregularities in the anterior corneal surface.

For this reason contact glasses were first used to correct high degrees of irregular corneal astigmatism and for patients with conical cornea. In these cases a marked improvement in vision can be produced, and although the wearing of the glass causes some irritation, certain individuals become able to wear them several hours at a time. O'Rourke has reported the case of a school teacher with conical cornea who could wear one eight hours at a time. In France two cases have been reported where the irritation was so slight that the contact glass could be worn constantly. Numerous patients are able to wear the glasses for periods of several hours. If myopia or hyper-

opia is present, in addition to the corneal error, a correction for this can be ground into the contact glass also.

In many cases of conical cornea the improvement in visual acuity is remarkable. One patient under my care, who had a visual acuity of 2/200 in the afflicted eye, was able to develop 20/30 acuity with the use of the contact glass. Unfortunately she suffered considerable irritation from the glass and was unable to wear it for long periods.

From what has been said so far, it may be easily seen that because of the inconvenience and irritation of contact glasses, as compared with ordinary spectacles, that they will not come into general use for the correction of the usual errors of refraction. But they certainly have a field of application where the lowered visual acuity is due to corneal irregularities, and can often restore an optically disabled individual to useful work.

It is unfortunate that false publicity or exaggerations are circulated by the lay press concerning contact glasses, because in so doing discredit may be cast upon a special means of improving vision which is effective in selected cases. Contact glasses are not of recent origin, nor will they be a substitute for spectacles as now used; but they have a field in which they have no substitute and that is, in the correction of errors of refraction due to corneal irregularities where the wearing of the usual spectacles is found to be ineffective.

M. F. WEYMANN, Los Angeles.

A Common Surgical Failure.—Excision of the coccyx, because of pain following fracture dislocation, is a sufficiently common procedure to be of interest to all surgeons. The operation has become notorious because of the fact that too often, and to the chagrin of the surgeon, the preoperative symptoms continue after removal of the injured bone.

The cause of this failure is simple. Removal of the dislocated portion by disarticulation at a joint causes failure. The coccyx should be removed with half of the superjacent vertebral body, usually the last sacral segment, leaving a stump of medullary bone to which the soft tissues adhere firmly in healing, avoiding the formation of a painful bursa over the cartilage-covered stump.

We learned this fact by personal observation of the gross pathology at secondary operation. It could have been learned more easily in texts dated as far back as 1900.

HAROLD E. CROWE,
Los Angeles.

STATE MEDICAL ASSOCIATIONS

CALIFORNIA MEDICAL ASSOCIATION*

JUNIUS B. HARRIS.....President
JOSEPH M. KING.....President-Elect
EMMA W. POPE.....Secretary

OFFICIAL NOTICES

Fall Meeting of the Council.—The fall meeting of the Council of the California Medical Association will be held at the Hotel Huntington, Pasadena, on September 26, 1931.

* * *

Extension Lecture Service.—August in northern counties, and September in the southern portion of the state, mark a return to activity of the various component county medical organizations. The appointed committees or the secretaries of the various societies are now outlining the programs for the coming meetings.

In the September issue of CALIFORNIA AND WESTERN MEDICINE is usually printed an invitation to those members who can spare the time and who have something of scientific interest to present, to enroll as members of the Extension Lecture Service. This service is voluntary, and only indirectly remunerative. There is no fund to cover the cost of expenses of traveling. A call frequently comes at an inopportune moment, but that the service in some way compensates is evidenced by the infrequency of the requests for release. Those who address alert audiences, any one of whom may later discuss points in the talk, are given an invaluable training in clear and rapid thinking, lucid expression and rebuttal in discussion.

Interest in county society meetings is stimulated by having one paper on the program by an outside speaker. Some secretaries regularly call upon the Extension Service.

Will any members who have talks of medical value, who can hold the interest of their audiences, and who are willing to respond to calls from the various county societies, furnish their names to this office (2004 Four Fifty Sutter, San Francisco), and the titles of not more than three addresses before the 20th of September?

COMPONENT COUNTY SOCIETIES

VENTURA COUNTY

The regular monthly meeting of the Ventura County Medical Society was held Tuesday, June 9, at the Ventura County Clinic Building. The meeting was called to order by President Wright.

Members present were: Doctors Achenbach, D. G. Clark, Rhymes, Little, W. S. Clark, Wright, Felberbaum, Bianchi, Bardill, King, Shore, and Armitstead.

After reading and approval of the minutes of the previous meeting, the application of Doctor Mosher, who had been on file, was acted upon and approved for membership.

Communications were read.

Doctor Updegraf of Hollywood presented the paper of the scientific program, giving an interesting discussion of corrective plastic surgery, which was well received.

R. B. ARMITSTEAD, *Secretary*.

*For a complete list of general officers, of standing committees, of section officers, and of executive officers of the component county societies, see index reference on the front cover, under Miscellany.

CHANGES IN MEMBERSHIP

New Members

Los Angeles County—

James L. Busby
Manuel Chavez
M. Eugene Clark
Denver D. Coleman
Jay B. Cosgrove
James H. Cryst
Edward B. Dewey
George Eugene Dodge
William Vernon Dunbar
Clyde K. Emery
Wendy Stewart Emery

J. Earl Gossard
Ernest M. Johnstone
Francis M. McKeever
Claude K. Movius
Ben King Parks
Clarence C. Reed
Harry A. Shafor
Dennis Vincent Smith
Raymond W. Swinney
George P. Waller, Jr.
Robert Edwin Wyers

Merced County—Hartley G. Dewey.

San Bernardino County—George W. Clark.

San Diego County—William Holmes Ross.

Santa Clara County—Milton Alexander Premo.

Transfers

Roscoe W. Cavell, from Los Angeles to Kansas.
Warren E. Page, from San Francisco to Alameda County.

Deaths

Burnham, Marjorie Bonthron. Died at San Diego, June 26, 1931, age 54 years. Graduate of University of Michigan Medical School, Ann Arbor, 1903. Licensed in California, 1925. Doctor Burnham was a member of the Los Angeles County Medical Association, the California Medical Association, and the American Medical Association.

Coleman, Charles La Grange. Died at Oakland, July 25, 1931, age 52 years. Graduate of Cooper Medical College, San Francisco, 1903. Licensed in California, 1903. Doctor Coleman was a member of the Alameda County Medical Association, the California Medical Association, and the American Medical Association.

Hassler, William Charles. Died at San Francisco, August 1, 1931, age 63 years. Graduate of Cooper Medical College, San Francisco, 1892. Licensed in California, 1893. Doctor Hassler was a member of the San Francisco County Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

Hayden, Thomas M. Died at Carmel, August 3, 1931, age 77 years. Graduate of College of Physicians and Surgeons, Keokuk, Iowa, 1874. Licensed in California, 1876. Doctor Hayden was an honorary member of the Fresno County Medical Society, the California Medical Association, and the American Medical Association.

Meyers, Isadore Leon. Died at Long Beach, August 16, 1931, age 48 years. Graduate of Northwestern University Medical School, Chicago, 1905. Licensed in California, 1921. Doctor Meyers was a member of the Los Angeles County Medical Association, the California Medical Association, and a Fellow of the American Medical Association.

Taylor, James Edward. Died at Redding, August 3, 1931, age 59 years. Graduate of the University of California Medical School, San Francisco, 1899. Licensed in California, 1899. Doctor Taylor was a member of the Shasta County Medical Society, the California Medical Association, and the American Medical Association.



WILLIAM CHARLES HASSLER

OBITUARIES

William Charles Hassler
1868-1931

Dr. William C. Hassler, San Francisco public health officer, died suddenly at his home on August 1, 1931. Doctor Hassler had been ill for several weeks with a minor ailment, and the seriousness of his condition was not known to the general public.

Doctor Hassler was born in Calaveras County in 1868. He graduated from Columbia University and Stanford University and Cooper Medical College. He was made chief sanitary inspector of the city in 1900, and in 1915 he became health officer.

Doctor Hassler prior to his death had become an international authority on public health matters and represented the United States at the Public Health Conference at Geneva in 1926.

He was past president of the American Public Health Association and was past master of California Lodge No. 1, F. and A. M., and a member of the California Commandery and the Grand Commandery of the Knights Templar.

In 1929 he represented Secretary Wilbur at the Washington Child Health Conference, and had taken an active part in the forming of the present charter of San Francisco.

*

Adam Adolf Haas
1873-1931

On July 26, 1931, Dr. Adam A. Haas died in San Francisco. Doctor Haas was a native of Germany, having been born in the Palatinate, southern Germany. His early youth was spent in the United States, and he was a graduate from the University of Chicago. While doing postgraduate work in Germany in 1914, he served at the front as medical officer with the Germany army.

Doctor Haas is survived by his wife and four sons, who are now living in Germany.

The Coronary Artery in Health and Disease.—Under this caption Herrick,* whose reputation as an internist is widespread throughout this country, but whose special claim to fame rests upon his accurate original description of coronary occlusion, a condition which is now so generally recognized everywhere as one of the most important causes of sudden death, discusses in a part of his presentation the mechanism of production of heart pain. It is pointed out that there are two main theories advanced as to the causation of the anginal syndrome. The one ably supported by such outstanding men as Allbutt and Wenckebach, as well as Vaquez, holds the pain is due to a stretching of the diseased wall of the aorta. The older theory contends that pain is due to spasm or disease of the coronary artery or to perversion of function of the muscle supplied by that artery. This theory is the older of the two, but after Allbutt's pronouncements was largely discarded. Now the pendulum is swinging the other way, and an increasing number of physicians are becoming adherents of the coronary artery theory. In substantiation of this statement, Herrick details some twelve arguments which certainly would suggest, to the clinical observer at least, that heart pain is due to coronary dysfunction. Most of these arguments are old ones, as for example, the fact that nitrites dilate the coronary, and relieve pain; that angina is rare in syphilis, although aortic disease is extremely common; that angina is infrequently found in auricular fibrillation; that angina is rare in "chronic myocarditis"; and that adrenalin causes anginal attacks in old people, but not in younger individuals in whom there is no presumable coronary lesion. Some of the more advanced theories that would substantiate the coronary idea include the fact that the hypoglycemia of insulin causes anginal pain due to low sugar content of the arterial blood; moreover, anemia may produce anginal pain as a result of insufficient oxygen to the heart muscles when under stress; anginal pain may occur in hyperthyroidism; the heart muscles again being poorly supplied with blood through the damaged artery, when an increased amount of blood is necessary on account of a heightened metabolism; electrocardiographic evidence is very much more suggestive of a muscular degeneration as a result of coronary disease than to disease of the aorta; and certain vasomotor phenomena as Raynaud's disease are associated in a suggestive way with angina.

Herrick very justly states that the ultimate decision as to the causation of anginal pain has not been reached, and that only through the cooperation of the pathologist and practitioner of medicine, the experimental physiologist, and the student of electrocardiography will the enigma be solved.—*New Orleans M. and S. J.*, August 1931.

Medico-Legal Experts.—In his masterful retiring address, the last president of the Rhode Island Medical Society made a splendid suggestion—that the society establish a bureau of medical experts, willing, capable, diplomatic, and of unquestioned ability, to act as witnesses in court in medico-legal cases.

As a good medical witness must have an unusual taste for that work in order to create confidence in the courtroom and be of value to impartial justice he is serving, he requires, above all, unquestioned knowledge in that branch of medical science of which at the time he is the exponent. He must be brief and concise in his answers without going astray of the subject in hand. He must volunteer no uncalled-for information. He must have a "flare" for legal procedure, exactness and nicety of expression, and withal a sense of humor which can bear unruined the possible taunts and irony of cross-examination.

Obviously such a bureau would list only the names of those who desired this type of work and who, in the opinion of the society, could really qualify as experts—true specialists of unimpeachable reputation and experience.—*Rhode Island M. J.*, August 1931.

* Herrick, James B.: *Am. Heart Jour.*, 6:585, 1931.

MISCELLANY

Under this department are ordinarily grouped: News; Medical Economics; Correspondence; Twenty-five Years Ago column; Department of Public Health; California Board of Medical Examiners; and other columns as occasion may warrant. Items for the News column must be furnished by the twentieth of the preceding month. For Book Reviews, see index on the front cover, under Miscellany.

NEWS

Pacific Association of Railway Surgeons.—The twenty-ninth annual meeting of the association was held at the Yosemite National Park on August 28 and 29, 1931, with headquarters at the Hotel Ahwahnee.

The program included papers as follows:

Round-Table Conference: "Reexaminations of Railway Employees." Discussion opened by Dr. C. W. Hopkins.

Presidential Address, Dr. Alson R. Kilgore, San Francisco.

"Head Injuries" (lantern), Dr. C. W. Hopkins.

"Some Advantages of Spinal Anesthesia," Dr. Charles C. Green.

Address: "Surgical Heroism," Dr. R. W. Knox.

"Treatment of Severe Fractures" (motion pictures), Dr. John R. Nilsson.

"Cardiorenal Disease as a Problem with Railway Employees," Dr. Richmond E. Ware, Los Angeles.

"Treatment of Cancer," Dr. J. C. Landenberger, Salt Lake City and Dr. L. R. Cowan, Salt Lake City.

Round-Table Conference: "Résumé of Findings in Ten Thousand Physical Examinations." Discussion opened by Dr. John R. Nilsson.

Coming Meetings.—Utah State Medical Association, Salt Lake City, September 9-11. Dr. M. M. Critchlow, Boston Building, Salt Lake City, secretary.

American Association of Obstetricians, Gynecologists and Abdominal Surgeons, White Sulphur Springs, West Virginia, September 14-16. Dr. M. A. Tate, 19 West Seventh Street, Cincinnati, secretary.

American College of Surgeons. President, Dr. C. Jeff Miller, New Orleans. Director general, Dr. F. H. Martin, Chicago. Next meeting, New York City, October 12-15.

American Dietetic Association. President, S. Margaret Gillam, University Hospital, Ann Arbor, Mich. Business manager, Dorothy I. Lenfest, 25 East Washington Street, Chicago. Next meeting, Cincinnati, Ohio, October 19-21.

American Hospital Association. President, Dr. L. A. Sexton, Hartford Hospital, Hartford, Conn. Executive secretary, Dr. Bert W. Caldwell, 18 East Division Street, Chicago. Next meeting, Toronto, September 28 to October 2.

American Occupational Therapy Association. President, Dr. Joseph C. Doane, Jewish Hospital, Philadelphia. Secretary-treasurer, Mrs. Eleanor Clark Slagle, 175 Fifth Avenue, New York. Next meeting, Toronto, September 28 to October 2.

American Protestant Hospital Association. President Dr. B. A. Wilkes, Hollywood Hospital, Hollywood, Calif., Executive secretary, Frank C. English, D. D., Hyde Park Station O, Cincinnati. Next meeting, Toronto, September 25-28.

American Public Health Association, Montreal, September 14-17. Dr. Kendall Emerson, 450 Seventh Avenue, New York, acting executive secretary.

American Roentgen Ray Society, Atlantic City, September 22-25. Dr. John T. Murphy, 421 Michigan Street, Toledo, Ohio, secretary.

Annual Session Nevada State Medical Association will be held at Ely, Nevada, September 18-19, 1931.

Annual Session, Utah State Medical Association.—The thirty-seventh session of the Utah State Medical Association will be held at the Newhouse, Salt Lake City, on September 9, 10, and 11.

Guest speakers include: Harlow Brooks, M. D., New York University; A. J. Carlson, M. D., University of Chicago; Glen E. Cheley and Herman I. Laff, Denver; William Carpenter McCarty and Waltman Walters, Rochester, Minn.; Arthur Steindler, Iowa; N. Vern Peterson, New York; Howard Morrow, Chauncey D. Leake, Roderic P. O'Connor, Harrington Graham, John B. Doyle, and Walter E. Leonard from California; Frederick A. Kiehle from Oregon and Robert Levy from Colorado.

American Congress of Physical Therapy.—The tenth anniversary session of the American Congress of Physical Therapy will be held October 5, 6, 7, 8, 1931, at the Hotel Fontenelle, Omaha, Nebraska. The mornings will be devoted to clinics, while scientific papers will be read during the afternoon sessions. The unusually wide range of subjects and the meritorious papers which will be presented make this program an outstanding one.

For preliminary program and other information write to the American Congress of Physical Therapy, 30 North Michigan Avenue, Chicago.

CORRESPONDENCE

Subject of Following Letter: Another New Drugless Cult for California

The secretary of the California State Board of Medical Examiners has sent to the editor a copy of a recent letter to one of the inspectors of the board, which should be of interest to California licentiates in medicine. Letter follows:

San Francisco, Calif., August 4, 1931.

Albert Carter, Special Agent,
Board of Medical Examiners,
909 Pershing Square Bldg.,
Los Angeles, California.

Dear Mr. Carter: We are quite interested in your letter of July 29 announcing that V. M. Crause is connected with the Antithesians, incorporated under the laws of California and embracing benevolent, fraternal, social, economic and commercial activities. This is probably the antithesis of the Chirothesians, who have caused us so much trouble as violators of the Medical Practice Act in the past.

Inasmuch as the Antithesians are all instructed in the "new science of Celesophy," which is announced to be "the science of cell wisdom and deals with the practical application of the cell consciousness when put into practice," we have added to our fifty-seven varieties of so-called drugless healing this new group and have credited Los Angeles as being its birth place.

Very truly yours,

C. B. PINKHAM, M. D.,
Secretary-Treasurer.

Subject of Following Letter: Health Centers Maintained by Health Department of County of Los Angeles

Note: One of the special articles in this number of CALIFORNIA AND WESTERN MEDICINE is by Dr. J. L. Pomeroy, Los Angeles County Health Officer. The following letter gives some interesting information

Major Health Centers, Los Angeles County Health Department

Health Center	Opening Date	Location	Approximate Cost		Attending Staff	Patient Attendance July 1930-May 1931, Inclusive
			Building	Equipment		
Alhambra	1930	612 W. Shorb St., Alhambra	\$123,316.69	\$28,159.96	17	29,263
Compton	1927	1301 Mona Blvd., Compton	54,313.21	15,555.35	13	27,919
East Side	1928	678 S. Ferris Ave., L. A.	87,551.82	38,869.59	34	61,042
Glendale	Qtrs. donated by Glen. City	111 No. Howard, Glendale	.....	5,638.99	19	21,486
Huntington Park	Qtrs. donated by H. P. City	6610 So. Malabar, Htg. Pk.	.....	6,388.70	9	19,959
Inglewood	Rented quarters	101 So. Grevillea, Inglewood	.....	11,436.61	15	17,001
Monrovia	Bldg. altered 1931	211 W. Orange St., Monrovia	Cost of alterations 10,038.52	12,514.50	7	13,423
Pomona	1927	280 W. 5th St., Pomona	74,972.56	17,629.84	15	16,436
Redondo	Rented quarters	City Hall, Redondo	.....	.....	4	1,946
San Fernando	1927	604 S. Maclay Ave., S. F.	44,559.84	18,487.42	14	26,654
Santa Monica	1928	1525 Euclid St., S. M.	78,586.16	13,103.46	16	18,784
Whittier	1927*	402 S. Greenleaf Ave., Whit.	.....	6,644.55	9	13,217

* Property deeded to County by Whittier Board of Trade.

concerning the Health Centers already established in Los Angeles County and is here printed because it has a bearing on some topics considered in several of the medical economic articles in this number of CALIFORNIA AND WESTERN MEDICINE. The letter follows:

To the Editor: Enclosed herewith please find tabulation of information concerning major health centers of the county of Los Angeles, as per your request.

Very truly yours,

J. L. POMEROY, M. D.,
County Health Officer.

By N. P. LEVIN, M. D.,
Chief Clinic and Hospital Physician.

* * *

Subject of Following Letter: Stipends for Interns

Editorial comment was made in the August CALIFORNIA AND WESTERN MEDICINE on the question which had arisen at the Los Angeles County General Hospital, relative to payment of cash stipends to interns and student nurses. (See August CALIFORNIA AND WESTERN MEDICINE, page 133.)

The matter was taken up with the members of the Board of Supervisors, one of whom is John R. Quinn, a well known alumnus of the University of California and former national commander of the American Legion. Supervisor Quinn espoused the cause of the interns. The following letter shows the happy outcome in this matter:

County of Los Angeles: Board of Supervisors,
Los Angeles, July 30, 1931.

To the Editor: Following up your suggestion on the interns and nurses, I brought the matter to a head Monday at the board and they definitely determined that the place to economize in the hospital was not in the salaries of the interns or student nurses.

Sincerely yours,

JOHN R. QUINN.

MEDICAL LEGISLATION

Senate Roll Call on S. B. 175 (Fellom): Which Bill Would Have Given Corporations the Right to Practice Medicine for Profit.

Senate Bill 175 (Fellom) has been discussed in several issues of CALIFORNIA AND WESTERN MEDICINE. In the June CALIFORNIA AND WESTERN MEDICINE, page 419, the vicious features of that bill were commented upon. Also the difficulties which were encountered in fighting the measure.

It is good to know who are with and against, when important issues are at stake. The forty-ninth legislature now belongs to history and as a matter of historical interest an item on page 26 of the *Senate Daily Journal* of May 8, 1931, is here reprinted. The roll call is called to the attention of all California Medical Association members, and especially to component county society committees on public policy and legislation.

That item gives the final Senate vote on Senate Bill 175, above referred to. The item reads as follows:

"Senate Bill No. 175.—An act to define medical and hospital service companies and agents; to provide for the regulation, supervision and licensing thereof; to create a fund therefor; to create the office of Commissioner of Medical and Hospital Service Companies; to provide for the enforcement of said act and penalties for the violation thereof; and to make an appropriation.

"Bill read third time.

"The question being on the passage of the bill.

"The roll was called, and Senate Bill No. 175 refused passage by the following vote:

"AYES—Senators Baker, Carter, Crittenden, Deuel, Fellow, Ingels, Maloney, Moran, Rich, Rochester, Treacy, Tubbs and Williams—13. (Those who voted "aye" voted in favor of having the bill becoming a law.)

"NOES—Senators Allen, Breed, Bush, Cassidy, Christian, Clock, Duval, Edwards, Evans, Harper, Hays, Inman, Jones, McCormack, McKinley, Mixer, Nel-

TABLE 1.—Senators Voting for Senate Bill No. 175

Name of Senator	Party	District	County	Home Address
Baker, C. C.....	R.	17th	Monterey	National Bank Bldg., Salinas
Carter, Henry E.....	R.	31st	Los Angeles	1040 Island Ave., Wilmington
Crittenden, B. S.....	R.	20th	San Joaquin	Stockton
Deuel, Charles H.....	D.-R.	6th	Butte	Chico
Fellom, Roy.....	R.-D.	14th	San Francisco	Call Bldg., San Francisco
Ingels, R. R.....	R.-D.	4th	Mendocino	Ukiah, R. F. D. 2
Maloney, Thomas A.....	R.-D.	23rd	San Francisco	341 Connecticut St., San Francisco
Moran, John L.....	R.-D.	8th	Tehama	Corning
Rieh, W. F.....	R.-D.	10th	Yuba	Marysville
Rochester, Geo. W.....	R.-D.	37th	Los Angeles	922 Fidelity Bldg., Los Angeles
Treacy, Timothy E.....	D.	21st	San Francisco	39 Buena Vista Terrace, San Francisco
Tubbs, Tallant.....	R.-D.	19th	San Francisco	200 Bush St., San Francisco
Williams, Dan E.....	R.-D.	26th	Tuolumne	Jacksonville, via Chinese Camp

TABLE 2.—Senators Voting Against Senate Bill No. 175

Name	Party	District	County	Home Address
Allen, James M.....	D.-R.	2nd	Siskiyou	Yreka
Breed, Arthur H.....	R.	16th	Alameda	Latham Square Building, Oakland
Bush, David F.....	R.-D.	22nd	Stanislaus	Oakdale
Cassidy, Bert A.....	R.-D.	3rd	Placer	Auburn
Christian, E. H.....	R.	13th	Alameda	1097 D Street Hayward
Clock, Rolph H.....	R.	33rd	Los Angeles	1216 Security Bldg., Long Beach
Duval, Walter H.....	R.-D.	25th	Ventura	Santa Paula
Edwards, Nelson T.....	R.-D.	39th	Orange	350 South Glassell Street, Orange
Evans, H. J.....	R.	35th	Los Angeles	234 N. Canyon Blvd., Monrovia, P.O. Box 272
Harper, William E.....	R.	40th	San Diego	3317 First Street, San Diego
Hays, Ray W.....	R.	30th	Fresno	Brix Building, Fresno
Inman, J. M.....	R.-D.	7th	Sacramento	McLean Building, Sacramento
Jones, Herbert C.....	R.-D.	18th	Santa Clara	Auzerias Building, San Jose
McCormack, Thomas.....	R.	5th	Solano	Rio Vista
McKinley, J. W.....	R.	38th	Los Angeles	621 Security Building, Los Angeles
Mixter, Frank W.....	R.-D.	32nd	Tulare	Exeter
Nelson, H. C.....	R.-D.	1st	Humboldt	1819 H Street, Eureka
Pedrotti, J. L.....	R.-D.	29th	Los Angeles	225 Wilcox Building, Los Angeles
Schottky, Andrew R.....	R.	24th	Merced	Shaffer Building, Merced
Sharkey, Will R.....	R.-D.	9th	Contra Costa	Martinez
Slater, Herbert W.....	D.-R.	12th	Sonoma	Santa Rosa—Box 96
Swing, Ralph E.....	R.	36th	San Bernardino	Garner Building, San Bernardino
Wagy, J. I.....	R.	34th	Kern	Bakersfield

son, Pedrotti, Schottky, Sharkey, Slater, Swing and Wagy—23. (Those who voted "no" voted against the bill becoming a law.)

The senators, with their county and home addresses, who voted in favor of Senate Bill 175, which, if it had been enacted into law, would have given corporations the right to practice medicine for profit, are listed in Table 1.

The senators, with their county and home addresses, who voted against Senate Bill 175 becoming a law, and who therefore have the commendation of the medical profession, are listed in Table 2.

CALIFORNIA STATE FAIRS— PUBLIC HEALTH EXHIBITS

The possibility of public health exhibits at California state and county fairs has been discussed in CALIFORNIA AND WESTERN MEDICINE at different times. The 1930 report of the Standing Committee on Health and Public Instruction also emphasized the importance of such exhibits (see June CALIFORNIA AND WESTERN MEDICINE, page 442). The Council of the California Medical Association is giving the subject is serious consideration, and as soon as detailed plans for an exhibit that can be used in different state and county fairs, from year to year, are whipped into form, the Council will proceed further with the plan. (See February 1931 CALIFORNIA AND WESTERN MEDICINE, page 122.)

It may be of interest to note that the Board of Medical Examiners of the State of California inaugurated such an exhibit at the California State Fair grounds at Sacramento. The report thereon by the secretary of the board, Dr. C. B. Pinkham, has some suggestive value and is here reprinted:

For the first time in its history, the Board of Medical Examiners, in conjunction with several other divisions of the Department of Professional and Vocational Standards, placed an exhibit in the California State Fair held in Sacramento August 30 to September 7, 1930.

A placard prominently displayed gave the following concise information regarding the Board of Medical Examiners:

Organized in California under the first Medical Practice Act in 1878.

Has never cost the State of California one penny.

Self-supporting from fees.

Composed of ten well-known competent graduates of medical schools and practicing physicians and surgeons in California.

Passes on credentials, conducts examinations and issues licenses to practice under the Medical Act.

Has a legal staff and three full-time investigators.

Prosecutes violators of the Medical Practice Act.

Disciplines those under its jurisdiction that are guilty of misconduct.

Main office, Sacramento, with suboffices in San Francisco and Los Angeles.

Basically necessary to the functioning of the various branches of State government as far as is concerned the practice of medicine, i. e., state hospitals, compensation insurance, industrial accident commission, department of health, narcotic enforcement, etc.

Issues annually a complete directory listing all licensees in good standing and containing a copy of the Medical Practice Act and much valuable information.

Renders an annual report to the Governor, which is published in the directory.

Average written examinees each year..... 314

Average number of licenses issued annually..... 632

Average annual loss by death..... 187

Applications on file, including deceased and re-

jected..... 20,000

Number of licensees in good standing..... 11,388

At the top of the entire exhibit, conspicuously placed, was a large placard reading—"Use care in choosing your doctor."

The exhibit included:

(a) Display of the various printed applications and other forms used in our administrative work.

(b) Beneath a large placard reading "Shun x-ray machines used to remove superfluous hair from your body," were displayed photostatic copies of affidavits and reports of permanent disfigurement following the use of x-ray machines in the removal of unwanted hair from the human body.

(c) Rogues gallery displayed beneath a placard reading "Beware of the Eyesight Swindler," which consisted of photostats of eyesight swindlers with their fingerprint classification; history of various asserted operators of

this fraudulent practice; complaints of victims relating payment of various amounts (some as high as \$2200) for a few drops of sterile water ostentatiously dropped in the victims' eyes by some glib-tongued swindlers. Their methods are more fully explained in this report under the caption "Eyesight Swindlers."

(d) Under a placard reading "Fraudulent credentials seized by the Board of Medical Examiners. Their use is a felony," were exhibited phostats of various fraudulent medical diplomas, credentials, etc., seized by the Board of Medical Examiners, photographs and descriptions of the "sharps" used and a brief history of each case.

The display aroused great interest in a large number of visitors. We hope it carried a warning message throughout the State that will be most helpful in guarding our citizens against such swindlers.

CALIFORNIA LICENSURE STATISTICS

Number of Doctors in Los Angeles County—In Relation to Population

At a recent conference of the Medical Advisory Board of the Health Department of the County of Los Angeles, Dr. J. L. Pomeroy, County Health Officer, made mention of some tables he had compiled showing the number of physicians who had registered for practice in Los Angeles County during the last ten years and the editor requested that a copy be sent him for possible use in CALIFORNIA AND WESTERN MEDICINE. These tables are submitted because they have an intimate connection not only with the standards of practice in the healing art, but with the economic phases of medical practice. (See Table 1.)

In a discussion of medical economic problems, it is quite important to keep in mind the thought that the monetary returns to physicians depend quite a deal upon the total number of doctors who are licensed to practice the healing art. And in California it is necessary to not only take into consideration doctors of medicine, but also all other licentiates who have received licenses to practice the healing art from sectarian examining boards. The figures in the accompanying tables are very significant.

In connection with the tabulations showing numbers of different licentiates in the county of Los Angeles, it may be of interest to note the figures showing number of medical graduate licentiates for California as given by the 1931 *American Medical Directory* of the American Medical Association.

TABLE 2.—Number of Registered Doctors and Population Ratio, County of Los Angeles—On Date July 1, 1931

On July 1, 1931	Number Practicing Doctors Each Group	Population Per Doctor By Group
M. D.	3,832	619
D. O.	806	2,943
D. C.	1,272	1,872
All groups	5,910	401

The grouping in Table 3 gives the California figures for the years 1929 and 1931 for physicians and for hospitals.

TABLE 3.—Number of Physicians and Hospitals in California

	Physicians			Hospitals	
	1929	1931	Gain or Loss	1929	1931
California..	9,421	10,109	688 plus	423	425

TABLE 1.—Annual Increase in Registration of Doctors in County of Los Angeles—Years 1921-1930

Fiscal Year	Doctors of Medicine			Doctors of Osteopathy			Doctors of Chiropractic			Doctors of Science of Chiropractic			Midwives			Total of All Groups		
	No.	Gain	Pct. Gain or Loss	No.	Gain	Pct. Gain or Loss	No.	Gain	Pct. Gain or Loss	No.	Gain	Pct. Gain or Loss	No.	Gain	Pct. Gain or Loss	No.	Gain	Pct. Gain or Loss
1921-22	253	.....	.....	56	.....	.....	6	.....	.....	8	.....	.....	0	.....	.....	323	.....	.....
1922-23	275	22	8.7	29	27	48.2	114	108	1800.0	4	4	50.0	1	1	.....	423	100	31.0
1923-24	396	121	51.2	97	68	231.0	7	107	97.4	8	4	100.0	4	3	300.0	512	89	21.0
1924-25	307	89	22.5	47	50	51.5	392	385	5500.0	5	3	37.5	2	2	50.0	753	241	47.1
1925-26	404	97	31.6	73	26	57.4	454	62	15.8	9	4	80.0	6	4	200.0	946	193	25.6
1926-27	270	134	33.2	88	15	20.5	134	320	70.5	6	3	33.3	4	3	33.3	502	444	47.0
1927-28	237	33	12.2	68	20	22.7	148	14	10.4	8	2	33.3	4	0	0	465	37	7.4
1928-29	237	0	0	93	25	36.8	132	16	10.8	5	3	37.5	1	3	75.0	468	3	0.6
1929-30	296	59	24.9	86	7	7.5	115	17	12.9	10	5	100.0	1	0	0	508	40	8.3
1930-31	283	13	4.4	64	22	25.6	87	28	24.3	10	0	0	5	4	400.0	449	59	11.6
Totals	2958	.....	.....	701	.....	.....	1589	.....	.....	73	.....	.....	28	.....	.....	5349	.....	.....

The grouping in Table 4 shows the increase in the number of physicians for California and for the entire United States, beginning with the year 1901, at which time the American Medical Association undertook the publication of its *American Medical Directory*.

TABLE 4.—Comparative Statement of the Number of Physicians in California and in the United States

American Medical Directory	California	Total United States
Volume 1, 1906.....	3,990	121,484
Volume 2, 1909.....	4,313	134,402
Volume 3, 1912.....	4,767	137,199
Volume 4, 1914.....	5,353	142,332
Volume 5, 1916.....	5,687	145,241
Volume 6, 1918.....	5,929	147,812
Volume 7, 1921.....	6,766	145,404
Volume 8, 1923.....	7,549	145,966
Volume 9, 1925.....	8,363	147,010
Volume 10, 1927.....	8,854	149,521
Volume 11, 1929.....	9,421	152,503
Volume 12, 1931.....	10,109	156,440

Other comparatively recent figures concerning California licentiates of the healing art were printed in the July 1930 CALIFORNIA AND WESTERN MEDICINE, page 517.

CALIFORNIA MEDICAL PRACTICE ACT

AMENDMENT OF 1931 IN RE: APPOINTMENT OF BOARD MEMBERS

At the 1931 session of the California Legislature, Section 1 of the Medical Practice Act, which has to do with the appointment of examining board members, was amended. The Board of Medical Examiners of the State of California has an intimate relationship to the maintenance of standards of professional training and practice. For the information of members of the California Medical Association a list of the present board members and of the amended section is here printed.

The 1931 *Directory* of the Board of Medical Examiners of the State of California gives the following information concerning the terms of the board members as those terms would have expired under the Medical Practice Act prior to the 1931 legislative amendment, which went into effect on Friday, August 14, 1931. (Members who are not reappointed to succeed themselves, or whose successors are not appointed, hold office until their successors are appointed.)

- William R. Molony, term ends August 10, 1931.
- H. M. Robertson, term ends August 10, 1931.
- George Dock, term ends August 10, 1932.
- H. A. L. Ryfkogel, term ends August 10, 1932.
- Harry V. Brown, term ends August 10, 1933.
- P. T. Phillips, term ends August 10, 1933.
- C. B. Pinkham, term ends August 10, 1933.
- C. L. Abbott, term ends August 10, 1934.
- William H. Geistweit, term ends August 10, 1934.
- C. E. Schoff, term ends August 10, 1934.

From the above it will be noted that subsequent to August 10, 1931 and prior to August 14, two members of the board, Doctors Molony and Robertson, could have been reappointed. If such appointments were made by Governor Rolph, then according to the law as amended, the terms of Dr. George Dock and Dr. H. A. L. Ryfkogel will expire on September 15, 1931, and on January 15, 1932, the terms of Doctors Harry V. Brown and P. T. Phillips and C. B. Pinkham will expire.

However, if appointments for the successors of Doctors Molony and Robertson have not been made prior to August 14, 1931, then on September 15, 1931, the terms of Doctors Molony and Robertson would necessarily come to an end. In that event, on January 15, 1932, the terms of Doctors George Dock and H. A. L. Ryfkogel will come to an end and the term of Dr. Brown or Dr. Phillips or Dr. Pinkham will come to an end, through selection by lot among these last three members.*

In the event that Governor Rolph makes only one appointment between August 10, 1931 and August 15, 1931, then, as the editor interprets the law, the term of either Dr. Molony or Dr. Robertson will end on September 15; and it will be necessary for Dr. Dock and Dr. Ryfkogel to draw lots to determine whether Dr. Dock's or Dr. Ryfkogel's term expires on September 15. On January 15, 1932, the terms of three more members expire, which means that the term of either Dr. Dock or Dr. Ryfkogel (*i. e.*, the one who drew the longer term by lot) will expire and, in addition, two out of the three terms of Doctors Brown, Phillips, and Pinkham will expire, the determination here again being made by lot, as required under the new law.

From the above it is noted that during the next six months at least five, and possibly six or seven appointments, out of the total available ten places may be made by Governor Rolph to the Board of Medical Examiners of the State of California.

Perusal of Section 1 of the amended law will clarify the above. The amended section as presented and passed in the last legislature and approved by the Governor, James J. Rolph, Jr., on June 16, 1931, is printed below:

Assembly Bill No. 1520

CHAPTER 1006

An act to amend section 1 of the state medical practice act, relating to the tenure of office of the members of the board of medical examiners.

[Approved by the Governor June 16, 1931]

The people of the State of California do enact as follows:

Section 1. Section 1 of the act cited in the title hereof is hereby amended to read as follows:

Section 1. A board of medical examiners to consist of ten members, and to be known as the "board of medical examiners of the State of California" is hereby created and established. The governor shall appoint the members of the board, each of whom shall have been a citizen of this state for at least five years next preceding his appointment. Except as herein provided, the term of office of the members of the board shall be four years and they shall hold office until the appointment and qualification of their successors. Each of the members shall be appointed from among persons who hold licenses under any of the medical practice acts of this state. The terms of the members of the board in office when this amendment takes effect shall expire as follows: two on September 15, 1931; three on January 15, 1932; two on January 15, 1933; and three on January 15, 1934. Such terms shall expire in the same relative order as to such members as the terms for which they hold office before this amendment takes effect, except that members whose terms would have expired on the same day shall determine their relative order by lot. The terms commencing September 15, 1931, shall expire January 15, 1935. Vacancies occurring under the provisions of this section shall be filled by appointment for the unexpired term. No person in any manner owning any interest in any college, school or institution engaged in medical instruction shall be appointed on the board, nor shall more than one member of the board be appointed from the faculty of any one university, college, or other educational institution. The governor shall have power to remove from office any member of the board for neglect of duty required by this act, for incompetency, or for unprofessional conduct. Each member of the board, shall before entering upon the duties of his office, take the constitutional oath of office.

* At the time the copy for these comments is being sent forward to the printer, it has not been possible for the editor to learn the exact dates of appointments which were pending or which had been made. Thus, the daily press printed an item that Dr. William R. Molony of Los Angeles had been succeeded by Dr. Percival Dolman of San Francisco, but it is not known whether Doctor Dolman's appointment was made prior or subsequent to August 14, 1931, the date on which the amended act went into effect as law.

MEDICO-LEGAL

LIEN BILL OF NEW JERSEY—FOR THE PROTECTION OF HOSPITALS

FOREWORD.—Mention has been made in past issues of CALIFORNIA AND WESTERN MEDICINE of the great financial and other hardships which have so often fallen upon small California hospitals which were located near dangerous highway crossings, so that the injured persons were taken to such institutions.

These injured persons are often strangers in such communities. They are given emergency and other treatment and care in such hospitals, and when recovery is sufficient depart from the institution—again and again without paying for the expenses of hospital care, to the existence and ministrations of which they may have been indebted for health or life.

At best some of these smaller hospitals in California have a very difficult struggle for existence and can ill afford such demands. To make the matter worse, after some of the automobile accidents, suits have been entered and verdicts for damages have been given, but the persons who had received the hospital care used every means to evade payment of their hospital and medical obligations.

At the 1929 California legislature a lien bill was presented but died in committee. Recently the editor read an item concerning the hospital lien bill of the State of New Jersey, which became a law in 1930. Through the courtesy of the New Jersey Custodian of the State Capitol, copies of these lien bills (New Jersey S. 117, 1930, Chapter 72 and Chapter 158) were secured. The matter is of great importance to many hospitals and physicians of California and would seem worthy of careful study by county medical society officers and committees on medical economics. For that reason the text of the New Jersey law (Chapter 72) and its amendments (Chapter 158) are here printed. These New Jersey laws may have suggestive value for the California Medical Association Committee on Public Policy and Legislation and other standing committees whose members have been studying this problem. Whether a bill could be drafted that would give physicians a lien on money judgments rendered is another phase of the problem to which consideration might be given.

CHAPTER 72

An Act to provide for liens in favor of hospitals and other charitable institutions furnishing care, treatment, and maintenance of persons injured in accidents upon the rights of action, claims or demands of such injured persons against other persons or corporations for damages on account of negligence causing the injuries and upon the proceeds of the settlements of any such claims or demands.

PREAMBLE

Whereas, It is a common occurrence for persons injured in accidents to be taken to hospitals, there to receive care and treatment for their injuries, and to be maintained during such care and treatment, and subsequently for such injured persons, or their estates to make settlements of their claims and demands against the persons or corporations whose negligence is claimed or alleged to have caused the accident and to collect the amounts of such settlements without paying the hospital charges; and

Whereas, In such cases it seems fair and reasonable that such hospital charges should be paid out of the proceeds of any such settlement, or out of any judgment or award recovered by the injured person, his or her estate, against the person or corporation held to be liable for the injuries received in the accident; therefore

Be it enacted by the Senate and General Assembly of the State of New Jersey:

HOSPITALS ENTITLED TO COLLECT FOR SERVICES IN ACCIDENTS

1. Every charitable association, corporation or other institution maintaining a hospital in the State of New Jersey, supported in whole or in part by private charity, shall be entitled to a lien upon any and all rights of action, suits, claims, counterclaims or demands of any person admitted to any such hospital and receiving treatment, care and maintenance therein, on account of any personal injuries received in any accident as the result of the negligence of any other person or corporation, which any such injured person may or shall have,

assert or maintain against any such other person or corporation for damages on account of such injuries, for the amount of the charges of such hospital for such treatment, care and maintenance.

LIEN ATTACHED

2. The lien of any such hospital shall attach to any verdict, report, decision, decree, award, judgment or final order made or rendered in any action or proceeding in any court of record of New Jersey, or any public board or bureau, in any suit, action, or proceeding brought by such injured person, or by the estate of such injured person in case of deaths as the result of such injuries, against any other person or corporation for the recovery of damages or compensation on account of injuries received in any such accident, as well as to the proceeds of any settlement thereof, or the settlement of any such claim or demand effected by any such injured person with any other person or corporation whose negligence is claimed or alleged to have been the cause of the said accident or effected with any other person or corporation on account thereof.

LIEN HAS PRIOR RIGHT—JUDGMENTS, ETC., IN FORCE—PROVISIO

3. No release of any claim or demand on account of any such injuries, or in respect of any such verdict, report, decision, decree, award, judgment or final order, made or rendered as hereinbefore mentioned, executed by any such injured person, or by his or her estate, shall be valid or effectual, between the parties thereto or otherwise, unless, prior to the execution and delivery thereof, all such charges of any such hospital or institution shall have been paid in full, or to the extent of the full and true consideration paid or given to the injured person by the other party or parties to such release named therein, or paid or given by any other person or corporation in behalf of such other party or parties, and unless such release shall also have been executed by the corporation, association or institution maintaining such hospital; and every such verdict, report, decision, decree, award, judgment or final order shall remain in force and effect until all such charges of any such hospital or institution shall have been paid in full or to the extent of any such verdict, report, decision, decree, award, judgment or final order; provided, that a notice containing the name of the injured person, the date of the accident and the amount of such hospital charges shall be filed within three months after the date of the accident by such corporation, association or institution in the office of the clerk of the county in which such hospital or institution is situated.

COUNTY CLERK TO KEEP HOSPITAL LIEN DOCKET—ENTRIES—INDEX—FEES

4. Every county clerk shall at the expense of the county, provide a suitable, well-bound book, to be called the hospital lien docket, in which, upon the filing of any lien claim under the provisions of this act, he shall enter:

The name of the injured person, the date of the accident, the name of the hospital or other institution making the claim, and the amount thereof.

And the said clerk shall make a proper index of the same in the name of the injured person; and such clerk shall be entitled to twelve cents for filing each claim, and at the rate of eight cents per folio for such entry made in the lien docket and six cents for every search in the office for such lien claim.

5. This act shall take effect immediately.
Approved April 7, 1930.

CHAPTER 158*

An act to amend an act entitled "An act to provide for liens in favor of hospitals and other charitable institutions furnishing care, treatment, and maintenance of persons injured in accidents upon the rights of action, claims or demands of such injured persons against other persons or corporations for damages on account of negligence causing the injuries and upon the proceeds of the settlements of any such claims or demands," approved April seventh, one thousand nine hundred and thirty.

Be it enacted by the Senate and General Assembly of the State of New Jersey:

SECTION I AMENDED

1. Section one of the act of which this act is amendatory is hereby amended so as to read as follows:

HOSPITALS ENTITLED TO COLLECT FOR SERVICES IN

ACCIDENTS—PROVISIO—NOTICE FILED WITH COUNTY CLERK—NOTICE TO THOSE LIABLE

1. Every charitable association, corporation or other institution maintaining a hospital in the State of New Jersey, supported in whole or in part by private charity, shall have a lien upon any and all rights of action, suits, claims, counterclaims or demands of any person admitted to any such hospital and receiving treatment, care and

* Editor's Note.—Items under Chapter 158 are amendments to items which are part of Chapter 72, which act was approved on date of April 7, 1930. The amendments were approved on April 16, 1930.

maintenance therein, on account of any personal injuries received in any accident as the result of the negligence of any other person or corporation, which any such injured person may or shall have, assert or maintain against any such other person or corporation for damages on account of such injuries, for the amount of the reasonable charges of such hospital for such treatment, care and maintenance of such injured person at ward rates in such hospital up to the date of payment of such damages; provided, a notice in writing containing the name and address of the injured person, the date of the accident, the name and location of the hospital and, if known, the name of the person or persons, firm or firms, corporation or corporations alleged to be liable to make compensation to such injured person for the injuries received, shall be filed in the office of the county clerk of the county in which such injuries shall have occurred, prior to the payment of any moneys to such injured person or his legal representative as compensation for such injuries. After the filing of such notice it shall be the duty of the hospital to mail, postage prepaid, a copy of such notice, with a statement of the date of the filing thereof, to the person or persons, firm or firms, corporation or corporations alleged to be liable to make compensation for the injuries sustained by such injured person, if their name and address shall be known.

SECTION 3 AMENDED—LIEN HAS PRIOR RIGHT

2. Section three of the act of which this act is amendatory is hereby amended so as to read as follows:

3. After the filing of the notice as herein provided, no release of any judgment, claim or demand by such injured person shall be valid or effectual as against such lien and the person or persons, firm or firms, corporation or corporations making any payment to such injured person or his legal representative as compensation for the injuries sustained shall for a period of one year from the date of such payment as aforesaid remain liable to such hospital for the amount of its reasonable charges due at the time of such payment as aforesaid, to the extent of the full and true consideration paid or given to the injured person, and any such charitable association, corporation or other institution or body maintaining such hospital may, within such period, enforce its lien by a suit at law against such person or persons, firm or firms, corporation or corporations making any such payment.

SECTION 4 AMENDED—HOSPITAL LIEN DOCKET KEPT BY COUNTY CLERK—ENTRIES—INDEX—FEES—RIGHT TO EXAMINE HOSPITAL RECORDS

3. Section four of the act of which this act is amendatory is hereby amended so as to read as follows:

4. Every county clerk shall, at the expense of the county, provide a suitable, well-bound book, to be called the hospital lien docket, in which, upon the filing of any lien claim under the provisions of this act, he shall enter:

The name of the injured person, the date of the accident, the name of the hospital or other institution making the claim.

And the said clerk shall make a proper index of the same in the name of the injured person; and such clerk shall be entitled to twelve cents for filing each claim, and at the rate of eight cents per folio for such entry made in the lien docket and six cents for every search in the office for such lien claim.

4. Any person or persons, firm or firms, corporation or corporations legally liable or against whom a claim shall be asserted for compensation for such injuries, shall be permitted to examine the records of any such association, corporation, or other institution or body maintaining such hospital in reference to such treatment, care and maintenance of such injured person.

5. This act shall take effect immediately.

Approved April 16, 1930.

HEALTH CENTER PROBLEMS *

A RECENT COUNTY HEALTH DEPARTMENT EXPERIENCE

The public health work of the city of — is administered by the County Health Department through Section 4225 of the Political Code permitting boards of supervisors to make contracts with

* Editor's Note.—At the time this statement is sent to the printer the subjects here discussed are awaiting consideration at a conference at which representatives of the Los Angeles County Health Department and the Health Center will be present. The health centers of public health departments are not well understood by many physicians. The editor has deleted the name of the district because that is not necessary in a consideration of the argument by County Health Officer J. L. Pomeroy, and which, in part, is here reprinted. The subject-matter fits in with some of the general discussions which are printed in the Medical Economics symposium of this issue of California and Western Medicine, and on that account is given space in this number of California and Western Medicine.

cities for the performance by the county health officer of city health functions. The rule has been that the city and county appropriate as nearly equally as possible the total budget on the basis of service rendered to the city. In estimating what this 50 per cent will be, we take into consideration two factors: First, the amount of money paid by contract; second, the amount of money accruing to the county health department from the county tax rate in the city. This amount is estimated by reason of the percentage of the total assessment of the city to the total assessment of the entire county. There is no special tax levy for health purposes. The county health department budget is a part of the general tax levy, which last year was 88 cents.

ADVANTAGES

The advantages of this method briefly are:

1. That the city gets a definite return from its county tax which it otherwise would not.

2. A much better type of service can be rendered by a consolidation of resources than by individual action.

3. The control of communicable disease is much more efficient because in Los Angeles County the rural area and incorporated cities are one epidemiological problem. Disposal of sewage and refuse, public nuisances of all kinds and food and water supply involve alike both rural and municipal territory.

4. Since the county eventually carries the cost of the results of the ravages of disease in its county institutions from cities and rural area alike, it is a matter of public welfare that the county should attempt to cut down this load. That this is actually being done is seen in the marked reduction in death rates from tuberculosis, typhoid fever, smallpox, infant mortality, and many other diseases.

PUBLIC HEALTH WORK STANDARDIZED

In 1925 the American Public Health Association, through the efforts of its Committee on Public Health Administration, adopted definite standards as a result of various surveys made of many cities over the United States. Professor Ira V. Hiscock of Yale University was employed in 1928 to make a survey of the Los Angeles County Health Department. As a result of his report, which was very exhaustive and detailed, the Efficiency Bureau of Los Angeles County reorganized in many respects the work of the county health department. It can, therefore, be said with absolute authority that the public health activities of the department are being carried out according to the highest standards in the United States. The city of Alhambra (one of our contract cities) recently won first prize in the United States Chamber of Commerce contest in which over two hundred cities were entered, and received a bronze plaque commemorating this event.

SHALL STANDARDS BE MAINTAINED?

During the period of economic depression, which today seemingly exists everywhere, the question is extremely important as to whether health standards are to be maintained and, if so, why. Experience has shown, not only in Germany but in many other countries where the economic conditions have been infinitely worse than in America, that tuberculosis and many other diseases have shown a very marked and rapid increase, and these increases have been directly attributed to the lack of proper nutrition and the cutting down of welfare and health activities. In Los Angeles County, with a large foreign population, particularly Mexican and Japanese, the history of our department shows that plague, smallpox and typhus fever are a deadly menace hanging over the community at all times. We are peculiarly exposed because of the fact that we are very close to the border of Mexico and, further, that thousands of persons of the lower classes are coming here hoping to find employment. The contracts at Boulder Dam and the advertising of many organizations are partially responsible for this. Furthermore, the reputation of Los Angeles County is seriously endangered as a

tourist center, and next year we are expecting visitors in great numbers to the Olympic games. We are certainly courting great danger in lowering our standards of public health in any respect. It is certainly poor insurance against disaster at this time. News travels rapidly in this day of the radio and airplane. The responsibility for maintaining public health standards is plainly a very grave one and the matter should not be approached lightly.

IMPORTANCE OF CO-OPERATION

The county health department has built up, over a period of seventeen years, a cooperative plan which now embraces some thirty-five incorporated cities. Each district is treated as a unit. Variations in costs paid by different cities are largely explainable by two reasons:

1. The charge is dependent upon the service rendered. One cannot compare two cities with equal population and the amounts paid on this basis. The city is charged according to the service rendered.

2. Consideration has to be given the total assessed valuation. In some cities the population is small, but the assessed valuation is high. As a result the amount of the contract is proportionately small.

PRESENT SITUATION

The county health department has up at the present time the question of renewal of a health contract with the city of _____. This city has a population of 27,103 people. In the same district are three other cities, namely:

- _____, population 8619
- _____, population 7517
- _____, population 22,022

The unincorporated area in the district has a population of 50,892. The total population of the four cities is 65,291. The total population of this particular health department district is, therefore, 116,153.

The total expenditures for the period ending December 31, 1930, for the entire district, were \$67,844.50. Of this amount the sum of \$49,828.89 was expended inside the four incorporated cities. The sum of \$18,015.61 was expended in purely unincorporated territory. The per capita expenditure, therefore, for the entire district was 58 cents. The per capita for the incorporated cities was at the rate of 76 cents, and for the unincorporated territory 35 cents.

For areas between 100,000 to 250,000 population the results of the United States Chamber of Commerce recent investigations showed that the per capita expenditure was \$1.82. Thus an expenditure of 58 cents for the area including 116,000 persons is well below that of the leading cities of the United States of this population. Such authorities as Dr. Joseph Mountain of the United States Public Health Service claim that the minimum appropriation for public health service should not be less than \$1 per capita, and for even moderately adequate service \$1.50 per capita is needed. The standard of the United States Chamber of Commerce is \$2 per capita. It is therefore certain that the expenditure of 58 cents is indeed a very modest per capita cost for the district which is here discussed.

RECOMMENDATION OF PHYSICIANS' BUREAU

At the present time the health department of the county of Los Angeles is requesting a renewal of the health contract with _____. The sum of money requested was \$7080, which was the same amount as for the year previous. Of this amount \$1500 is paid directly by the city for rental of the present Health Center quarters. The balance is paid directly to the county treasurer. This amount is 26 cents per capita, which is less than half of the per capita cost for the district. Taking into consideration the \$7699 coming from the tax assessment roll, the total amount of money available for _____ City was \$14,779. The combined per capita, then, of both contract and assessment roll gives a total for _____ of 54 cents. The amount expended in _____ was \$33,266, a per capita of \$1.22. Thus the city put up on a per capita basis 54 cents and the county 68 cents, and 14 cents

more was expended per capita by the county in _____ than by the city itself.

The City Council asked the _____ Bureau of the Chamber of Commerce of _____ for a report advising them as to what they should do. . . .

COMMENT ON PHYSICIANS' BUREAU REPORT

1. The statement made that expenditures of the taxpayers' money at the present time should be minimized to the very limit, and that the health department appropriation should be cut 50 per cent is unreasonable. The Detroit Bureau of Municipal Research, one of the leading bureaus of its kind, after an exhaustive study reported that public health work was one of the fundamental activities that in times of economic stress should not be cut. In July 1930, the total visits of all persons attending various services at the _____ Health Center was 1109. In June 1931, the number of visits was 3308, an increase of 300 per cent. The year previous epidemics of smallpox, scarlet fever, diphtheria, and poliomyelitis occurred. The staff have made great efforts this year to protect the district against smallpox and diphtheria, with the splendid result that 53 per cent of the children in the public schools are now protected against smallpox, and 45 per cent against diphtheria. The result is that a tremendous reduction has taken place amounting to over 50 per cent in diphtheria. Rabies has been epidemic in the district, resulting in 108 persons applying for Pasteur treatment. A total of \$1154.75 was expended for rabies vaccine to persons who could not pay for treatment. Sixty-five cases of smallpox occurred during the year, and scarlet fever was unusually prevalent. Convalescent serum was furnished free of cost to all physicians requiring it, there being a total of fifty-four cases of poliomyelitis during the year.

There are thirty-eight schools in the _____ district, with a daily average of attendance of 22,680 children. Besides the work on communicable disease, other divisions are the sanitation and food, which covers the water supply, milk, pure food and drugs, and public nuisances. The milk supply in the district is of the highest quality, but remains so only because of constant work. During the year the epidemic of "jake" paralysis occurred, necessitating the inspection of all Jamaica ginger and quarantining all misbranded material in the district. The enforcement of the state laws on sanitation are mandatory and cannot be neglected without serious results.

The nursing division functions not only for the communicable disease work, but for all the clinics, and as an educational force in the community. A total of nine new clinics and five new conferences was opened during the year. A great deal of time has been spent on tuberculosis, diphtheria, infantile paralysis, scarlet fever, smallpox, and typhoid. It must be remembered that there are seventeen schools in this district under the Los Angeles City Board of Education and that these schools look to the county health department for protection against communicable disease.

The district has been handicapped during the year because of not having a local medical social worker. The cases have been sent to another health center for eligibility, which was a considerable handicap. The county office is planning at the present time to put a medical social worker on duty at the Health Center, which will improve this part of the work. Nevertheless during the year all cases requiring eligibility investigation have been cared for as far as possible. Appended hereto is a complete list of all the personnel, the work performed, and the kinds of services in the district.

Laboratory work is performed for the _____ district at the _____ Health Center or the main laboratory in Los Angeles City. . . .

2. The report of the committee states that the city of _____ and other towns are paying entirely too much for their health service, and that they can easily combine and conduct their own health department cheaper. Attached hereto is a memorandum

discussing the question of distribution of costs, which refutes this statement. The actual division of costs is: county 42 per cent, and cities 58 per cent. If the services from the central office were added the division of costs would be on a fifty-fifty basis.

Relative to the statement that the cities could combine and conduct their own health department, this question is entirely one of standardization. The total amount available at the present time from the various cities is \$12,480. The total population of the cities involved is 65,000 persons. According to the proposition made by the committee, this would mean 19 cents per capita. It is out of the question to assume that any reasonably adequate health service can be maintained for 19 cents per capita, when the average per capita of all cities in the whole United States is about 86 cents. It is true that a city may have just the kind of health service that they pay for. It is true that a budget of \$12,000 might employ two or three persons on a public health program. It is also true that the medical profession could practice medicine as our grandfathers did, with a saddle bag and an assortment of pills. Possibly a good many patients would be just as well satisfied today, and in fact a very large percentage of the population is satisfied today with a cultist-fakir treatment or even a dose of Chinese herbs. Why a community of 65,000 people is willing in many instances to accept cultist, fakir, Chinese herb and many other similar low-standard treatments, is, in the writer's mind, without question the absolute result of many years of neglect on the part of the medical profession and the public health authorities to organize sufficiently so that the entire public realizes the difference in standard between scientific medicine and the cultists and quacks. . . .

Furthermore, assuming that the committee was able to get the four cities to abandon the contract plan, they would still contribute the sum of \$16,422 through county taxes to the county health department, for which, under their own suggestion, they would get absolutely no return.

3. The committee recommends the closing of the Venereal Clinic. It is curious that at a time when Dr. Thomas Parran, Jr., health commissioner of the State of New York, in *The Journal of the American Medical Association* of July 11 of this year, makes an appeal to the profession for more intensive work on syphilis. . . .

In the city of Detroit, which won first prize in the United States Chamber of Commerce contest, 4.2 cents per capita are being expended on venereal disease work. This standard, applied to the ——— district, would mean that at least \$4200 should be expended on venereal disease control. The actual amount expended on venereal disease in ——— district during the last fiscal year was \$740, or seven cents per capita.

How do the physicians of ——— district intend to take care of this problem, which is a public health problem, if the county closes its venereal disease clinic?

4. The committee recommends the closing of the contraceptive clinic. This, together with the venereal clinic, has been condemned as being almost vicious. It is strange criticism, in view of the endowment by the late Dr. H. G. Brainard (who was a president of the California Medical Association) of the Mother's Center of Los Angeles, which is open to the general public, and of the recommendations of the most prominent students of crime, delinquency and eugenics, and the recent endorsement by many leading religious organizations of the world. Let it not be forgotten that every drug store is selling openly all kinds of contraceptive devices, with no restrictions whatever, to man, woman, and child. Furthermore, it is a well-known fact that the abortionist thrives in our midst. It is not of infrequent occurrence that even so-called regular, reputable medical men are arrested as a result of the death of a woman under circumstances of criminal abortion.

Let us, therefore, analyze just what the contraceptive clinic at ——— is for, and what it accomplishes. . . .

5. It is also recommended that the prenatal and well baby clinics be closed. It is contended that these clinics give no service that could not be rendered by any licensed practicing physician in the community. This statement is perfectly true. There is scarcely any public health service on which the same statement would not hold good. On the other hand, the general public is not yet educated to the point where they will pay any physician to take care of a well baby. Particularly at this time, when the incomes of the entire nation have been cut 33½ per cent, it is not fair to assume that a very large number of the general public will pay for well baby and prenatal service. It is the duty of the health department to deal with the public. The prenatal and well baby service is intended to reduce the death rate among mothers and infants, so far as causes of ignorance, neglect and carelessness are concerned. It is an educational activity which results, in the long run, as follows:

1. The reference of thousands of persons to the regular physician who would otherwise go to irregulars and quacks.

2. As a result of the recent survey made by Doctor Wilkes of the American Child Health Association, it was definitely shown that the well baby clinic increased the work of the pediatricians throughout the country.

In ——— the Health Center, including all clinics, referred out to private physicians 2085 patients, 486 of whom were referred by the Child Welfare Division. The infant mortality of the county has been reduced from ninety-three in 1915 to forty-six in 1930, which has meant the saving of three thousand babies who otherwise might now be dead. Reference can be made to the Child Health Conservation reports of the White House Conference held by President Hoover, which gives in detail the recommendations of leading physicians and health authorities throughout the nation on this question. . . .

IN CONCLUSION

The most serious difficulty in the situation lies in the effect on the citizen layman of the district when his City Council casts a doubt on the necessity and character of the public health work at the health center. The disruption of the work at ———, furthermore, will affect every city under contract in the entire county. Those forces so constantly at work to hamper preventive medicine will undoubtedly take advantage of any rupture between the medical profession and the organized public health forces. The department has stood loyally against these forces, and has prevented poorly trained cultist practitioners from getting in and doing this work. Should the clinics be discontinued, other agencies will capitalize the situation and the medical profession will merely have transferred the situation completely out of their control. In Los Angeles City Dr. ———, who is not a physician at all, has an attendance of about 96,000 mothers annually in her conferences, which are absolutely and entirely private organizations, for which she charges \$1 per patient visit. The department stores and newspapers, the cultist practitioners and other organizations are eager to get into the health center field. When the work of child hygiene was started in the County Health Department, the non-medical doctor just referred to was in complete charge of such clinics all over the county. We have driven her out of the field except in three or four cities. . . .

The situation is one calling for very careful consideration from all angles, and the medical profession and the health department should stand shoulder to shoulder against our common foes—disease and ignorance.

* * *

In connection with the above, and as bearing on topics discussed in other papers in this number of *CALIFORNIA AND WESTERN MEDICINE*, the following letter, which was sent to County Health Officer

Pomeroy of Los Angeles by Dr. LeRoy A. Wilkes, who was prominently identified with President Hoover's White House Conference on Child Welfare, may also be of interest:

It was a pleasure to see your fine organization at work, and to have the opportunity to study its operation at first hand. Your Child Health Conference work is strictly in accordance with the principles of educational and preventive practice as conducted by practically all of the most progressive health departments throughout the country, and advocated by the White House Conference and the association which I represent. It is worthy of note that a questionnaire was sent to all physicians interested in pediatrics, as listed in the American Medical Association Medical Directory (1929 edition), in which were asked the following questions: "Has the educational efforts of health agencies (a) helped (b) not affected (c) hurt your private practice? The replies were overwhelmingly in agreement that such practices had not only benefited the public but also the private practitioners of medicine. Confirmation was also obtained on this opinion by a similar questionnaire sent to general practitioners of ten and of fifteen years' practice who reside in places under 50,000 population.

Dr. Borden Veeder, Clinical Professor of Pediatrics of Washington University (St. Louis, Missouri), made an inquiry among his postgraduate students who took one month's course in "Preventive Pediatrics," held each summer for the last several years, and he found that these doctors came back in order to get the necessary training in preventive practices and educational child health measures "because their patients had been trained to demand such services"—through just such work as is being done so well in your own and similar progressive health departments.

The idea of decentralizing the facilities for medical care of ambulatory indigents in need of treatment is further developed in the West than with us, but the principle is, of course, not new. We in the East, have not been so far-seeing as you in providing these curative services at convenient centers, though we are undoubtedly coming to it. The private practitioners of medicine all over the country, and especially in the East, are each year realizing more and more the value of educating the public. This procedure, so well carried on in your department, not only protects the health of the people which is your sworn responsibility to your community, but gets to the family physician a larger number of cases of defects and disease which the patient is consciously or unconsciously neglecting. "Defects tend to become worse in the large majority of cases; to produce secondary defects; and in many cases become in time irremediable, if neglected" (Cornell). Such important facts as these are unknown to many parents, and when explained to the parent the advice to seek the aid of the family physician is often gratefully appreciated and acted upon.

Some of our less progressive practitioners occasionally give evidence of failure to appreciate the need and value of the procedures in vogue in the Health Conference Centers, but the number is constantly dwindling as they investigate the facts and come to understand that health preservation is largely a matter of education and practice.

When the pioneer health educational work of health departments and in the public schools has been carried on a few more years, I predict that there will be an appreciation and demand on the part of the public of such magnitude that every doctor's office will also become a health conference center as well as a treatment center. At present only the recent graduates in medicine from the more progressive schools are now sufficiently trained in technique and point of view to undertake such services with hope of success.

The report of the Medical Care Committee of the White House Conference which was held in Washington in February of this year at President Hoover's call, will contain much data and information on this subject. Meanwhile congratulations on your accomplishments and on the fine support given you by your board and your professional colleagues.

Sincerely,

(Signed) LeROY A. WILKES, M.D.,
Director Medical Service, American Child Health Association.

450 Seventh Avenue, New York City, New York.

COUNTY HOSPITAL PROBLEMS*

THE SAN DIEGO COUNTY HOSPITAL SITUATION—HOW IT WAS HANDLED

To the Editor.—During the years 1928 and 1929, an attending Staff Committee from the San Diego County Hospital worked out statistics showing that 60 per

*Editor's Note.—At the request of the editor, Dr. Chester O. Tanner has written this report on some problems which came up for consideration in connection with the work of the San Diego County Hospital. The manner in which the San Diego County Medical Society handled its problem may be of interest and has suggestive value to other component county medical societies of the California Medical Association.

cent of all the hospital patients in the county of San Diego were in the County Hospital; and that the daily census was about 600 patients with a population of approximately 200,000 people in the entire county. It did not seem likely to the Staff Committee that during 1928 and 1929 (prosperous years) 60 per cent of the people were indigents. The basis of the trouble was found to be largely in the Social Service Department over which the attending staff had no real control or supervision. The hospital was really run by one member of the Board of Supervisors (detailed to that duty) and by the superintendent of the hospital, who in turn was appointed by the supervisors. Friends of supervisors, city and county employees, and many other people well able to pay were being hospitalized at the expense of the county of San Diego and were treated absolutely free by the visiting staff, which was composed of members of the San Diego County Medical Society.

The medical society, through its committee, then waited upon the Board of Supervisors with a proposal that a hospital advisory board be created. After numerous meetings and compromises an ordinance was passed creating a Hospital Advisory Board of seven members—two to be appointed by the medical society, two by the Board of Supervisors, one by the California taxpayers, one member of the Board of Supervisors and a seventh, a lay member to be chosen by the first six. According to the state law the hospital management could not be taken away from the supervisors and turned over to this board, but the ordinance did give the board supervision "over the medical personnel, medical policies, and social service."

The Advisory Board was immediately organized and has been functioning since the 1st of January 1931. The supervisors, through their own member on the hospital board, have taken all recommendations 100 per cent, even to the naming of a new hospital superintendent. The committee at all times refrained from all interference with the business end, such as buying supplies, and so on.

As a consequence of the new policies, the social service rules have been tightened and instead of running a daily census of 600 patients in prosperous times, we are now running an average of 450, even in this time of economic depression. We saved \$60,000 out of last year's budget, and the new budget going in for the fiscal year—July 1931 to July 1932—calls for more than \$100,000 less than the previous year's budget. All this has been accomplished without cutting down the caliber of service rendered to the patients. Everybody has to go through the Social Service Department now. The fact that a person is employed by the city or county really is a reason for keeping him out instead of letting him in, because he has a steady job, if anyone has.

Before the change in management the preceding administration was planning to go before the voters with a bond issue of half a million dollars to build and equip a new wing of 150 beds. At present we have 200 empty beds and, under a normal growth, will not require any new additions for probably ten years.

3255 Fourth Street, San Diego.

Mention was made above concerning the ordinance which was passed by the Board of Supervisors of San Diego, governing appointments to a county hospital advisory board. The credit for the original creation of such a board must go to Dr. O. D. Hamlin of Oakland, who, some years ago, was instrumental in working out a readjustment in Alameda County. The Alameda plan was sent to the San Diego County Medical Society for consideration. Inasmuch as such an ordinance might be desirable in other counties, the editor has secured a copy of that of San Diego County, and it is here printed for its reference value:

As taken from the minutes of Monday, October 27, 1931, book 62, page 153:

In the Matter of San Diego County General Hospital.

RESOLUTION CREATING EXECUTIVE HOSPITAL BOARD

On motion of Supervisor Hastings, seconded by Supervisor Hurley,

It is Resolved, that an Advisory Committee, consisting of seven members, be appointed in the interests of the indigent sick, to serve at the County Hospital to investigate and advise the Board of Supervisors on all matters concerning the medical personnel, medical policy, and social service at said County Hospital and to recommend policies for the administration of the San Diego County Hospital in accordance with the state law.

The said Advisory Committee shall be appointed as follows, viz.:

Two members by the San Diego County Medical Society to be approved by the Board of Supervisors; two representative citizens of the county of San Diego to be appointed by the Board of Supervisors, and approved by the San Diego County Medical Society; one member to be appointed by the San Diego division of the California Taxpayers' Association, and approved by the Board of Supervisors and the San Diego County Medical Society; and one member of the Board of Supervisors to be appointed by the said board. These six members shall appoint the seventh.

Passed and adopted by the Board of Supervisors of the County of San Diego, State of California, this twenty-seventh day of October, 1930, by the following vote:

Ayes—Supervisors: Hastings, Hornbeck, Aul, Good and Hurley.

Noes—Supervisors: None.

Absent—Supervisors: None.

TWENTY-FIVE YEARS AGO*

EXCERPTS FROM OUR STATE MEDICAL JOURNAL

Vol. IV, No. 9, September 1906

From some editorial notes:

State Society.—On August 22, the Council of the State Society met in San Francisco and considered, among other things, the advisability of calling a special meeting of the House of Delegates. It will be recalled that the unpleasant jar which occurred in San Francisco last April was so ill timed as to have taken place on the morning of the day on which our Constitution and By-Laws say the officers of the society shall be elected. After careful deliberation the Council concluded that it would not be advisable to call a meeting of the delegates, as it would put many to a degree of trouble and an amount of expense hardly to be justified. . . . The Council also elected Dr. James H. Parkinson of Sacramento to fill the vacancy in its number caused by the death of Dr. Thomas Ross.

The Sins of Physicians.—The present trend of the nostrum agitation has evoked much discussion of the sins of the pharmacist. Our JOURNAL has for some few years taken a slightly different attitude and, while recognizing the many and variegated sins of the pharmacist, has also called attention to a few of the sins of the physician which may have been, through precept or example, or even more actively, responsible, in some measure, for the former's sins. . . . Our only hope is in the Council on Pharmacy and Chemistry of the American Medical Association, and in the journal of the Association, which is to undertake to tell us, from time to time, still more of the truth about things pharmaceutical. Do not allow anything to blind you to the enormous value of this Council and its work. . . .

Another of Our Sins.—We have heard a good deal about habit-forming nostrums, or "patent" medicines, thanks to *Collier's Weekly* and the *Ladies' Home Journal*, and as a result of all this agitation, the Congress has at last enacted a pure food and drug bill that may really, in the long run, do something. It actually looks to us, from the way the work has been begun, as though a lot of good will come to the public from that law. But let us look at another side of this question of habit-forming drugs. How many of us use sufficient caution in giving or prescribing medicines containing morphine, opium, or cocaine?

* This column strives to mirror the work and aims of colleagues who bore the brunt of state society work some twenty-five years ago. It is hoped that such presentation will be of interest to both old and recent members.

How is it that so many patients know all about sulfonal and trional and other things? Do you mark your prescriptions "Not to be refilled under any circumstances," and if so, do you back up the druggist when he refuses to refill such a prescription and gets into a row with the patient? . . .

Proprietary Prostitution.—Some time ago the *Journal of the American Medical Association* published a statement to the effect that most proprietaries, no matter how exclusively they may have been presented to the medical profession at first, eventually became "patent" medicines, in the sense that they were later advertised directly to the public and encouraged self-medication. . . .

District Legislation Committees.—Tuesday, April 17, Doctor McKee of Sacramento, senator from that district, addressed the delegates on the subject of medical and health legislation. (See JOURNAL, June, page 176.) We may venture to recall the fact that Doctor McKee suggested the wisdom of forming senatorial district committees of two or three members in each senatorial district, which committees should act with the Committee on Public Policy and Legislation of the State Society. . . . It seems probable that these senatorial district committees will have considerable work to do, for there is always much foolish legislation dealing with health matters presented at every session of the legislature. More work can be done in setting these questions right in the minds of our solons by influential physicians who are known to the legislators, or known to influential constituents, than by rank outsiders; this is the reason for the committees. . . .

From an article on "Report of Twenty-Five Cases of Tuberculosis Treated with Intravenous Injections of Koch's Tuberculin" by Max Rothschild, M.D., San Francisco.

The following paper presents a report of a number of cases of tuberculosis treated with intravenous injections of Koch's tuberculin. It will be only a preliminary report as some of my patients have not been observed long enough to consider them as permanently cured; but in all cases of tuberculosis which I have treated in the last two or three years, the effect of this method has been so encouraging that I consider it my duty to recommend it to you, and to have you try it yourselves. It would have been also more satisfactory to me if a report of a larger number of cases could be given—this paper includes only twenty-five cases—but the number at any rate is large enough to exclude any deception in regard to the efficacy of the treatment. . . .

From an article on "Résumé of Work of Sanitation Performed by the San Francisco Board of Health, from April 18, 1906, to Date" by W. C. Hassler, M.D., San Francisco.*

Each one is sufficiently familiar with the memorable events of April 18, so that it requires no review of that period for the purposes of this paper. While chaos reigned throughout the city, and it would appear that each man if he attended to his own interests would be justified in so doing, yet to the lasting credit of the inspectors of the department of public health, as if actuated with one accord, they reported for duty within one hour of the disaster. The city was arbitrarily districted and each district placed in charge of an inspector who was directed to secure volunteers, which was done. Squads were detailed to rope off walls and buildings that were in immediate danger of collapse, and other groups were stationed along the fire line to assist in the work of rescue of injured and dead. . . .

On April 19 temporary quarters for the department of public health were established on Laguna Street, and from this point the work of sanitation began. . . .

* Editor's Note.—In the Obituary Column of this issue is recorded the death of Dr. William C. Hassler, which took place suddenly on August 1, 1931.

HEALTH OFFICERS OF CALIFORNIA

BY COUNTIES AND CITIES

The *Weekly Bulletin* of the California State Department of Public Health in its issue of July 25, 1931, printed a list of county and city health officers arranged by counties, the roster being as of June 30, 1931.

The list indicates in a general way the mode of organization of public health work as it exists at this time in California and, therefore, should be of interest to members of the California Medical Association. The roster is as follows:

Alameda County	Dr. John A. Azevedo, Hayward
Alameda	Dr. R. W. Sanders
Albany	Dr. Martin J. Lacey
Berkeley	Dr. Frank L. Kelly
Emeryville	Dr. George Rothganger
Hayward	Nelson E. Clemens, D. V. M.
Livermore	Dr. Paul E. Dolan
Oakland	Dr. Mark L. Emerson
Piedmont	Dr. Harry J. Smith
Pleasanton	Dr. J. Hal Cope
San Leandro	Dr. Luther Michael
Alpine County	Dr. F. H. Harrison, Minden, Nevada
Amador County	Dr. G. L. Lynch, Amador City
Amador City	Mr. Ben White
Jackson	Mr. Earl J. Garberini
Plymouth	Mr. Pete Laverone
Sutter Creek	Mr. Grant Shealar
Butte County	Dr. B. Caldwell, Biggs
Biggs	Mr. B. J. Dennis
Chico	Mr. Charles E. Tovee
Gridley	Dr. W. S. Lavy
Oroville	Mr. C. G. Crow
Calaveras County	Dr. George P. Cooper, Angels Camp
Angels Camp	Dr. E. W. Weirich
Colusa County	Dr. G. W. Desrosier, Colusa
Colusa	Dr. G. W. Desrosier
Williams	Dr. Charles F. Keith
Contra Costa County	Dr. I. O. Church, Martinez
Antioch	Dr. J. B. Blackshaw
Concord	Under County Supervision
El Cerrito	Dr. F. L. Horne
Hercules	Under County Supervision
Martinez	Under County Supervision
Pinole	Under County Supervision
Pittsburg	Dr. H. E. Peters
Richmond	Dr. Charles R. Blake
Walnut Creek	Under County Supervision
Del Norte County	Dr. Wilson Stegeman, Crescent City
Crescent City	Dr. F. Stump
El Dorado County	Dr. A. A. McKinnon, Placerville
Placerville	Mr. Walter E. Miller
Fresno County	Dr. James E. Pendergrass, Clovis
Clovis	Dr. M. S. McMurtry
Coalinga	Mr. W. T. Hayes
Firebaugh	Mr. Frank Borrecco
Fowler	Dr. H. W. Nielsen
Kingsburg	Dr. Ewald A. Larson
Parlier	Dr. James E. Pendergrass
Reedley	Dr. R. E. Allen
Sanger	Dr. Benjamin H. Viau
San Joaquin	Appointment not made
Selma	Dr. R. W. Binkley
Fresno	Dr. C. Mathewson
Glenn County	Dr. S. Igllick, Orland
Orland	Dr. S. Igllick
Willows	Dr. Etta S. Lund
Humboldt County	Dr. Lawrence A. Wing, Eureka
Arcata	Dr. B. Cooper
Blue Lake	Dr. B. Cooper
Eureka	Dr. W. J. Quinn
Ferndale	Dr. O. B. Barron
Fortuna	Dr. H. W. Comfort
Imperial County	Dr. Warren Fox, El Centro
Brawley	Dr. J. L. Parker
Calexico	Dr. W. T. Talbott
Calipatria	Dr. H. J. Havalick
El Centro	Under County Supervision
Holtville	Dr. John D. Keye
Imperial	Dr. H. V. Gray
Inyo County	Dr. Harvey W. Crook, Bishop
Bishop	Mr. W. L. Ray
Kern County	Dr. Joe Smith, Bakersfield
Bakersfield	Dr. P. J. Cuneo
Delano	Mr. A. Ackerman
McKittrick	Town Disincorporated
Maricopa	Dr. K. D. Cook
Taft	Dr. Oran Newton
Tehachapi	Dr. R. G. Doupe
Kings County	Dr. C. G. Newbecker, Hanford
Corcoran	Dr. J. H. Van Vorhis
Hanford	Mr. S. M. Brown
Lemoore	Dr. W. P. Byron

Lake County	Dr. W. E. Upton, Lakeport
Lakeport	Mr. N. A. Wilcox
Lassen County	Dr. Dan Coll, Susanville
Susanville	Dr. George Scott, Martin
Los Angeles County	Dr. J. L. Pomeroy, Los Angeles
Alhambra	Under County Supervision
Arcadia	Under County Supervision
Avalon	Dr. H. J. Strathearn
Azusa	Under County Supervision
Bell	Under County Supervision
Beverly Hills	Dr. Charles F. Nelson
Burbank	Dr. T. H. Ransom
Claremont	Under County Supervision
Compton City	Under County Supervision
Covina	Under County Supervision
Culver City	Dr. H. E. Anderson
Eagle Rock	Under Los Angeles City
El Monte	Under County Supervision
El Segundo	Under County Supervision
Glendale	Under County Supervision
Glendora	Under County Supervision
Hawthorne	Under County Supervision
Huntington Park	Under County Supervision
Hyde Park	Under Los Angeles City
Inglewood	Under County Supervision
La Verne	Under County Supervision
Long Beach	Dr. G. E. McDonald
Los Angeles	Dr. George Parrish
Lynwood City	Under County Supervision
Manhattan Beach	Under County Supervision
Maywood	Under County Supervision
Monrovia	Under County Supervision
Montebello	Under County Supervision
Monterey Park	Under County Supervision
Pasadena	Dr. J. D. Dunshee
Pomona	Under County Supervision
Redondo Beach	Under County Supervision
San Fernando	Under County Supervision
San Gabriel	Under County Supervision
San Marino	Dr. Lemoine Wills
Santa Monica	Under County Supervision
Sierra Madre	Under County Supervision
Signal Hill	Dr. R. J. Striegel
South Gate	Under County Supervision
South Pasadena	Dr. E. J. Johnston
Torrance	Under County Supervision
Tujunga	Under County Supervision
Venice	Under Los Angeles City
Vernon	Dr. H. F. Becker
Watts	Under Los Angeles City
West Covina	Under County Supervision
Whittier	Under County Supervision
Madera County	Dr. Lee A. Stone, Madera
Chowchilla	Dr. Howard G. Martin
Madera	Under County Supervision
Marin County	Dr. J. H. Kuser, San Rafael
Belvedere	Dr. C. W. Clark
Corte Madera	Dr. L. L. Robinson
Larkspur	Dr. Louis L. Robinson
Mill Valley	Mr. Will Falley
Ross	Dr. George H. Willcutt
San Anselmo	Dr. M. S. Edgar
San Rafael	Dr. H. M. Beck
Sausalito	Dr. Charna G. Perry
Mariposa County	Dr. A. M. Gregory, Mariposa
Yosemite	Dr. Hartley G. Dewey
Mendocino County	Dr. H. O. McClelland, Ukiah
Fort Bragg	Dr. Royal Scudder
Point Arena	Mr. M. S. Scott
Potter Valley	Under County Supervision
Ukiah	Dr. J. H. Hansen
Willits	Dr. Raymond Babcock
Merced County	Dr. W. C. Cotton, Atwater
Gustine	Dr. A. W. Gustafson
Livingston	Mr. F. M. Ecclefield
Los Banos	Dr. L. R. Hillyer
Merced	Dr. A. S. Parker
Modoc County	Dr. W. E. Coppedge, Alturas
Adin	Dr. L. C. Smith
Alturas	Dr. A. Gibson
Mono County	Dr. Gilbert A. Kelley, Bridgeport
Monterey County	Dr. R. Macleay Fortier, Salinas
Carmel	Under County Supervision
King City	Under County Supervision
Monterey	Under County Supervision
Pacific Grove	Under County Supervision
Salinas	Miss Marie Fidel
Soledad	Under County Supervision
Napa County	Dr. Robert S. Northrop, Napa
Calistoga	Mr. J. G. Finch
Napa	Mr. C. C. Hackett
St. Helena	Mr. C. C. Johnson
Nevada County	Dr. Carl P. Jones, Grass Valley
Grass Valley	Dr. Carl P. Jones
Nevada City	Mr. George H. Calanan
Orange County	Dr. K. H. Sutherland, Santa Ana
Anaheim	Under County Supervision
Brea	Under County Supervision
Fullerton	Under County Supervision
Garden Grove	Under County Supervision
Huntington Beach	Under County Supervision
Laguna Beach	Under County Supervision
La Habra	Under County Supervision

Newport Beach.....	Dr. Gordon M. Grundy
Orange.....	Under County Supervision
Placentia.....	Under County Supervision
San Clemente.....	Under County Supervision
Santa Ana.....	Under County Supervision
Seal Beach.....	Under County Supervision
Tustin.....	Under County Supervision
Placer County.....	Dr. Theodore Snynn, Auburn
Auburn.....	Dr. Theodore Snynn
Colfax.....	Dr. Charles J. Durand
Lincoln.....	Mr. F. R. Elder
Rocklin.....	Under County Supervision
Roseville.....	Dr. W. D. Hoffman
Plumas County.....	Dr. B. J. Lasswell, Quincy
Riverside County.....	Dr. W. B. Wells, Riverside
Banning.....	Mr. J. R. Page
Beaumont.....	Mr. S. L. Wells
Blythe.....	Dr. W. H. Chapman
Corona.....	Dr. W. S. Davis
Elsinore.....	Dr. S. J. Brimhall
Hemet.....	Mr. A. J. Berg
Ferris.....	Dr. Chester R. Brown
Riverside.....	Dr. W. B. Wells
San Jacinto.....	Appointment not made
Sacramento County.....	Dr. Hugh Beattie, Elk Grove
Isleton.....	Dr. J. H. Leimbach
North Sacramento.....	Dr. W. E. Weddle
Sacramento.....	Dr. Herbert F. True
San Benito County.....	Dr. L. C. Hull, Hollister
Hollister.....	Dr. Fred A. Earle
San Juan Bautista.....	Mr. E. Zanetta
San Bernardino County.....	Dr. S. B. Richards, San Bernardino
Barstow.....	Under County Supervision
Chino.....	Dr. W. C. Miller
Colton.....	Dr. J. A. Champion
Needles.....	Dr. W. G. Morton
Ontario.....	Dr. C. L. Emmons
Redlands.....	Dr. Harold G. Gentry
Rialto.....	Dr. L. P. Barbour
San Bernardino.....	Dr. W. W. Fenton
Upland.....	Dr. John B. Craig
San Diego County.....	Dr. Alex M. Lessem, San Diego
Chula Vista.....	Dr. F. E. Ashcroft
Coronado.....	Dr. Joseph I. Porter
East San Diego.....	Under County Supervision
El Cajon.....	Mr. Charles F. Richardson
Escondido.....	Dr. C. A. S. Kemper
La Mesa.....	Under County Supervision
National City.....	Under County Supervision
Oceanside.....	Under County Supervision
San Diego.....	Dr. Alex M. Lessem
San Francisco County.....	Vacancy
Dr. Jacques P. Gray, Acting Health Officer	
San Joaquin County.....	Dr. John J. Sippy, Stockton
Lodi.....	Under County Supervision
Manteca.....	Under County Supervision
Stockton.....	Under County Supervision
Tracy.....	Under County Supervision
San Luis Obispo County.....	Dr. Allen F. Gillihan, San Luis Obispo
Arroyo Grande.....	Under County Supervision
Paso Robles.....	Under County Supervision
San Luis Obispo.....	Under County Supervision
San Mateo County.....	Dr. F. Holmes Smith, San Bruno
Atherton.....	Mr. Grover C. Mull
Belmont.....	Mr. S. M. St. John
Burlingame.....	Dr. Matthew F. Desmond
Colma.....	Under County Supervision
Daly City.....	Dr. Ferdinand Callsen
Hillsborough.....	Mr. C. M. Hirschey
Menlo Park.....	Dr. R. J. Gerlough
Redwood City.....	Mr. Con Drathman
San Bruno.....	Dr. F. H. Smith
San Carlos.....	Mr. O. W. Stewart
San Mateo.....	Dr. W. C. McLean
South San Francisco.....	Dr. Thomas C. Doak
Santa Barbara County.....	Dr. R. C. Main, Santa Barbara
Carpinteria.....	Unincorporated
Guadalupe.....	Unincorporated
Lompoc.....	Under County Supervision
Orcutt.....	Disincorporated
Santa Barbara.....	Dr. W. H. Eaton
Santa Maria.....	Under County Supervision
Santa Clara County.....	Dr. C. M. Burchfiel, San Jose
Alviso.....	Dr. J. I. Beattie
Gilroy.....	Lawrence F. Vaughn, D. V. M.
Los Gatos.....	Under County Supervision
Mayfield.....	Under Palo Alto City
Morgan Hill.....	Dr. R. L. Newbold
Mountain View.....	Under County Supervision
Palo Alto.....	Mr. Louis Olsen
San Jose.....	Dr. H. C. Brown
Santa Clara.....	Under County Supervision
Sunnyvale.....	Under County Supervision
Willow Glen.....	Dr. R. A. Whiffen
Santa Cruz County.....	Dr. Samuel B. Randall, Santa Cruz
Santa Cruz.....	Dr. J. T. Harrington
Watsonville.....	Dr. George P. Tolman
Shasta County.....	Dr. B. F. Saylor, Redding
Kennett.....	Appointment not made
Redding.....	Mr. Leslie Engram
Sierra County.....	Dr. Carl C. Sutton, Downieville
Downieville.....	Under County Supervision
Loyalton.....	Mr. M. C. Johnson
Siskiyou County.....	Dr. Louis J. Lista, Mount Shasta
Dorris.....	Dr. Paul P. Baron

Dunsmuir.....	Mr. T. B. Wright
Etna.....	Dr. E. W. Bathurst
Fort Jones.....	Mr. John Schary
Montague.....	Mr. Frank French
Mount Shasta.....	Dr. Paul Wright
Yreka.....	Dr. Charles Plus
Solano County.....	Dr. W. C. Jenney, Vacaville
Benicia.....	Dr. P. B. Fry
Dixon.....	Mr. H. C. Grove
Fairfield.....	Dr. H. V. Clymer
Rio Vista.....	Mr. George A. Brown
Suisun.....	Dr. A. P. Finan
Vacaville.....	Mr. W. F. Hughes
Vallejo.....	Dr. E. A. Peterson
Sonoma County.....	Dr. P. A. Meneray, Santa Rosa
Cloverdale.....	Dr. Ira A. Wheeler
Healdsburg.....	Dr. J. Walter Seawell
Petaluma.....	Dr. G. R. Hubbell
Santa Rosa.....	Mr. E. J. Helgren
Sebastopol.....	Dr. Chester Marsh
Sonoma.....	Mr. J. P. Tate
Stanislaus County.....	Dr. O. I. Bemis, Modesto
Ceres.....	Dr. R. Stewart Hiatt
Modesto.....	Dr. Harold P. Muller
Newman.....	Dr. H. V. Armistead
Oakdale.....	Mr. C. E. Wood
Patterson.....	Mr. C. W. Kirk
Riverbank.....	Dr. O. I. Bemis
Turlock.....	Dr. C. E. Pearson
Sutter County.....	Dr. N. E. Richardson, Yuba City
Yuba City.....	Dr. J. H. Barr
Tehama County.....	Dr. E. E. Thompson, Red Bluff
Corning.....	Dr. Caroline Howes
Red Bluff.....	Dr. F. J. Bailey
Tehama.....	Dr. J. H. Belyea
Trinity County.....	Dr. David B. Fields, Weaverville
Tulare County.....	Dr. A. W. Preston, Visalia
Dinuba.....	Dr. Edgar R. Brigham
Exeter.....	Dr. Donald C. Fowler
Lindsay.....	Dr. Annie L. Bond
Porterville.....	Dr. J. W. Nicholson
Tulare.....	Dr. E. R. Zumwalt
Visalia.....	Dr. A. W. Preston
Tuolumne County.....	Dr. William L. Hood, Sonora
Sonora.....	Dr. William L. Hood
Ventura County.....	Dr. J. A. King, Ojai
Fillmore.....	Under County Supervision
Ojai.....	Dr. J. A. King
Oxnard.....	Under County Supervision
Santa Paula.....	Dr. John Crawford
Ventura.....	Dr. J. A. DeSerpa
Yolo County.....	Dr. Fred R. Fairchild, Woodland
Davis.....	Under County Supervision
Winters.....	Under County Supervision
Woodland.....	Dr. Fred R. Fairchild
Yuba County.....	Dr. J. H. Barr, Marysville
Marysville.....	Dr. R. Hanagan
Wheatland.....	Mr. H. Reithardt

Health Officer Has Right to Enter Schools.—Honorable U. S. Webb, Attorney General of California, has issued an important opinion relative to the right of the health officer to enter school property in order to institute measures for the control of communicable diseases. The opinion confirms a similar opinion issued by the District Attorney of San Diego County, which involves the interpretation of Section 1120 of the School Code, which reads as follows:

A parent or guardian having control or charge of any child enrolled in the public schools may file annually with the principal of the school in which he is enrolled a statement in writing, signed by such parent or guardian, stating that he will not consent to the physical examination of his child provided for in this chapter, and thereupon such child shall be exempt from any physical examination, but whenever there is a good reason to believe that such child is suffering from a recognized contagious or infectious disease, such child shall be sent home and shall not be permitted to return until the school authorities are satisfied that such contagious or infectious disease does not exist.

The Attorney General states that "obviously if in fact through a health officer or from any other source the health authorities had a reasonable ground for believing that a child was suffering from diphtheria, it would be not only the right but the duty of the school trustees to exercise the authority as specified in the code to protect the other children of the school. No one parent, or guardian, or child has any right in the premises, the exercise of which would endanger the health and the lives of the other children of the school. The general right and privilege of all the children and of all the parents and guardians is paramount and controls over any asserted individual privilege in the premises.—*Weekly Bulletin*, California State Department of Health.

CALIFORNIA BOARD OF MEDICAL EXAMINERS

By CHARLES B. PINKHAM, M.D.
Secretary-Treasurer of the Board

News Items, September 1931

"Concessions have been granted by the Mexican Government to J. R. Brinkley, Milford, Kansas, rejuvenation specialist, for the establishment of a radio station at Villa Acuna, Coahuila, Mexico, across the border from Del Rio, Texas. Brinkley, who has operated a station at Milford, was recently denied his license by the Federal Radio Commission on the basis the station was not being operated in the public interest" (United Press dispatch, San Francisco *News*, August 3, 1931). (Previous entries, July and October, 1930.)

Attention of the Investigation Department has recently been called to the incorporation of the "Antithesiases," which, according to the articles of incorporation, deal with Celosophy, defined as "drugless, save and except for the simple remedies found in every family medicine chest . . . (and) . . . does not include surgery other than the use of the fluoroscope and roentgen ray for observation purposes and colonic irrigations for cleansing and relief." According to the literature, membership costs \$10 for men and \$5 for women.

Recent press dispatches relate the appointment of George Sabichi, M. D., well known physician of Bakersfield, superintendent of the Whittier School for Boys.

Press dispatches relate that on July 14, 1931, Dr. Mildred E. Thoren, who has been acting as superintendent of Weimar Joint Sanitarium since the death of Doctor Whittington, was by action of the supervisors appointed medical director and general superintendent.

According to reports, Lau Yit Cho, alias Lau Wing, alias Kang Hing, Chinese herbalist, 502 Grant Avenue, San Francisco, on July 24, 1931, in the United States Federal Court, San Francisco, Judge Cosgrave presiding (Docket 22687), pleaded guilty to a felony in using the mails to defraud in violation of a postal fraud order, and was sentenced to five years' probation, with the understanding that he was to comply with the probation officer's orders and was not to use the mails in violation of the law and if he did so he would be sent to the penitentiary without any further trial or hearing. "Following the recent issuance of a fraud order against this firm at 502 Grant Avenue, San Francisco, they changed their name from Lau Yit Cho to Kang Hing and proceeded to mail out their same old literature of Lau Yit Cho that they had always used, and, regardless of the complaint, they sent the same diet slip and other instructions that they had used under their old name. . . ." (Previous entries, November 1930; July 1931.)

"Extreme leniency was shown Dr. S. A. Barber, sixty-one, Porterville doctor, here today, when he was granted two years' probation by Superior Judge Frank Lamberson, after pleading guilty to a charge of performing an illegal operation upon a nineteen-year-old Mendota girl last April. Terms of the probation include a suspended prison sentence and the proviso that the doctor leave Porterville fifteen days after his release from the county jail, where he is serving an eight months' sentence for selling morphin to Mrs. H. A. Todd of Visalia . . ." (Fresno *Bee*, August 3, 1931). (Previous entry, June and July 1931.)

"Revocation of the license of Dr. Wesley M. Barrett, osteopathic physician, was announced yesterday by the State Board of Osteopathic Examiners, following a hearing at the Biltmore Hotel. Doctor Barrett was charged with unprofessional conduct" (Los Angeles *Illustrated Daily News*, July 8, 1931). (Previous entry, May 1927.)

The records show that on July 3, 1931, the Appellate Division of the Superior Court, San Francisco, affirmed the conviction of Arthur Jay Green, who, according to reports, has been conducting lectures, freely using the prefix "Dr." in his advertising although he is said to have no medical credentials entitling him so to do. (Previous entry, April 1931.)

"While employed as a painter at the General Hospital, Francis Hanan, thirty-two, represented to patients that he was a physician and accepted money to treat them, he admitted yesterday in Municipal Judge Harold Landreth's court. Hanan pleaded guilty to violating the State Medical Practice Act by practicing without a license. Judge Landreth imposed a \$100 fine and suspended the penalty, placing Hanan on probation for six months" (Los Angeles *Examiner*, July 29, 1931).

Dr. William I. Kinsley, one-time candidate for Lieutenant Governor of California, today was sentenced to three years' imprisonment for violation of the State Narcotic Act. Doctor Kinsley was convicted on a charge of giving morphin tablets to a woman addict" (San Francisco *Examiner*, August 8, 1931).

Orin Joslin was reported found guilty by a Los Angeles jury August 3 on a charge of violation of the Medical Practice Act and the following day was sentenced to pay a fine of \$250 or serve twenty-five days in the city jail, sentence being suspended on condition that he does not violate the law or use the suffix M. D. "Defendant gave notice of appeal and was released on \$200 bail."

A complete history of Tsuneyoshi Lawrence Koba, mentioned in "News Items" of February 1930, was printed in the *Journal of the American Medical Association*, August 1, 1931, page 339, and is an interesting narrative of the use of fraudulent diplomas, etc.

Adolphe Linke is reported to have pleaded guilty in Los Angeles, August 6, to a charge of violation of the Medical Practice Act and was sentenced to pay a fine of \$100 or serve ten days in jail, both fine and jail sentence being suspended on condition of no further violation.

J. A. Maurer is reported to have pleaded guilty in the Justice Court of Los Angeles on July 23 and was sentenced to pay a fine of \$100, \$75 of which was suspended for two years on condition of no further violation of the Medical Practice Act, and \$25 paid.

On July 14 Herbert N. Tatum, licensed chiropractor, is reported to have pleaded guilty in the Municipal Court of Los Angeles to a charge of violation of the Medical Practice Act, and was sentenced to pay a fine of \$200 or serve twenty days in the city jail.

N. D. Willson, on July 15, 1931, was reported to have pleaded guilty in the Justice Court of Pasadena and sentenced to pay a fine of \$100 or serve sixty days in the county jail on a charge of violation of the Medical Practice Act, sentence being suspended for two years on condition of no further violation.